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Annual Report

July 1, 1989, to June 30, 1990

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**Missouri Highway and
Transportation Department**

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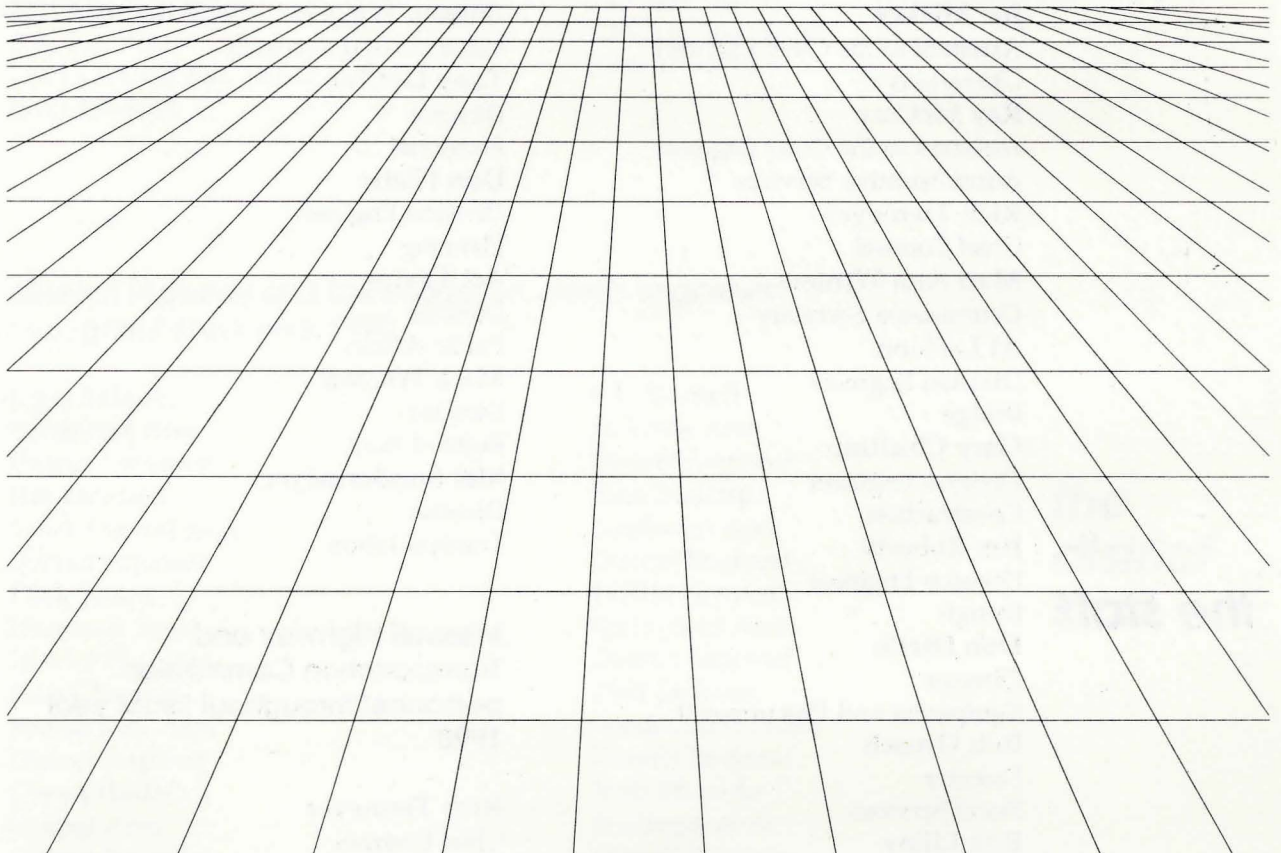
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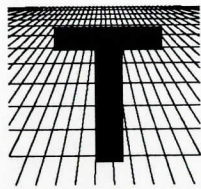
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the commission



he Missouri Highway and Transportation Commission is a six-member, bipartisan governing body for the Missouri Highway and Transportation Department. The governor with the Senate's consent appoints members to staggered, six-year terms on the commission. No more than three commissioners may be of the same political party.

The commission appoints the chief engineer, chief counsel and commission secretary. The chief engineer with commission approval appoints all other appointments.

Missouri Highway and Transportation commissioners throughout fiscal year 1990

John C. Cozad
Chairman
Don Walsworth
Vice Chairman
Harry T. Morley
Member
Carol L. Williamson
Member
John T. Oliver Jr.
Member
Thomas John Barklage
Member

Missouri Highway and Transportation officials throughout fiscal year 1990

Wayne Muri
Chief Engineer
Walt Vandelect
Assistant Chief Engineer
Frank Carroll
Assistant to the Chief Engineer Design
Joe Mickes
Assistant to the Chief Engineer Operations
Ray McCray
Assistant to the Chief Engineer Administrative Services
Rich Tiemeyer
Chief Counsel
Mari Ann Winters
Commission Secretary
Al Laffoon
Division Engineer Bridge
Gary Chullino
Division Engineer Construction
Jim Roberts
Division Engineer Design
Don Dietle
Director Equipment and Procurement
Bob Drusch
Director Fiscal Services
Roy Lilley
Director Information Systems

Jack O'Rourke
Director Internal Review, Audit and Systems
Roy Coplen
Division Engineer Maintenance and Traffic
Bill Trimm
Division Engineer Materials and Research
Tony DeClue
Director Personnel
Don Hiatte
Division Engineer Planning
Art Taylor
Director Public Affairs
Mark Weston
Director Right of Way
Mel Sundermeyer
Director Transportation

Missouri Highway and Transportation Commission personnel throughout fiscal year 1990

Rich Tiemeyer
Chief Counsel
Mari Ann Winters
Commission Secretary

the staff



District 1
Northwest Area
3602 N. Belt Highway
P.O. Box 287
St. Joseph, Mo. 64502
(816) 387-2350

District 2
North Central Area
U.S. Route 63
P.O. Box 8
Macon, Mo. 63552
(816) 385-3176

District 3
Northeast Area
Highway 61 South
P.O. Box 1067
Hannibal, Mo. 63401
(314) 248-2490

District 4
Kansas City Area
5117 East 31st Street
Kansas City, Mo. 64128
(816) 921-7104

District 5
Central Area
1511 Missouri Blvd.
P.O. Box 718
Jefferson City, Mo. 65102
(314) 751-3322

District 6
St. Louis Area
329 S. Kirkwood Road
Kirkwood, Mo. 63122
(314) 966-3800

District 7
Southwest Area
410 Range Line Road
P.O. Box 1445
Joplin, Mo. 64802
(417) 629-3090

District 8
Springfield Area
3025 East Kearney
M.O. Box 868
Springfield, Mo. 65801
(417) 866-3576

District 9
South Central Area
U.S. Business Route 63 North
P.O. Box 220
Willow Springs, Mo. 65793
(417) 469-3134

District 10
Southeast Area
P.O. Box 160
Sikeston, Mo. 63801
(314) 471-4170

the districts

Missouri Highway and Transportation district engineers throughout fiscal year 1990

Jiggs Miner
Northwest Area
District Engineer
Jim Jackson
North Central Area
District Engineer
Dick Jones
Northeast Area
District Engineer
Bob Chappell
Kansas City Area
District Engineer
Owen Redel
Central Area
District Engineer

J.T. Yarnell
St. Louis Area
District Engineer
Ken Stalcup
Southwest Area
District Engineer
Willis Graven
Springfield Area
District Engineer
Phil Jackson
South Central Area
District Engineer
Bob Sfreddo
Southeast Area
District Engineer

the district staff

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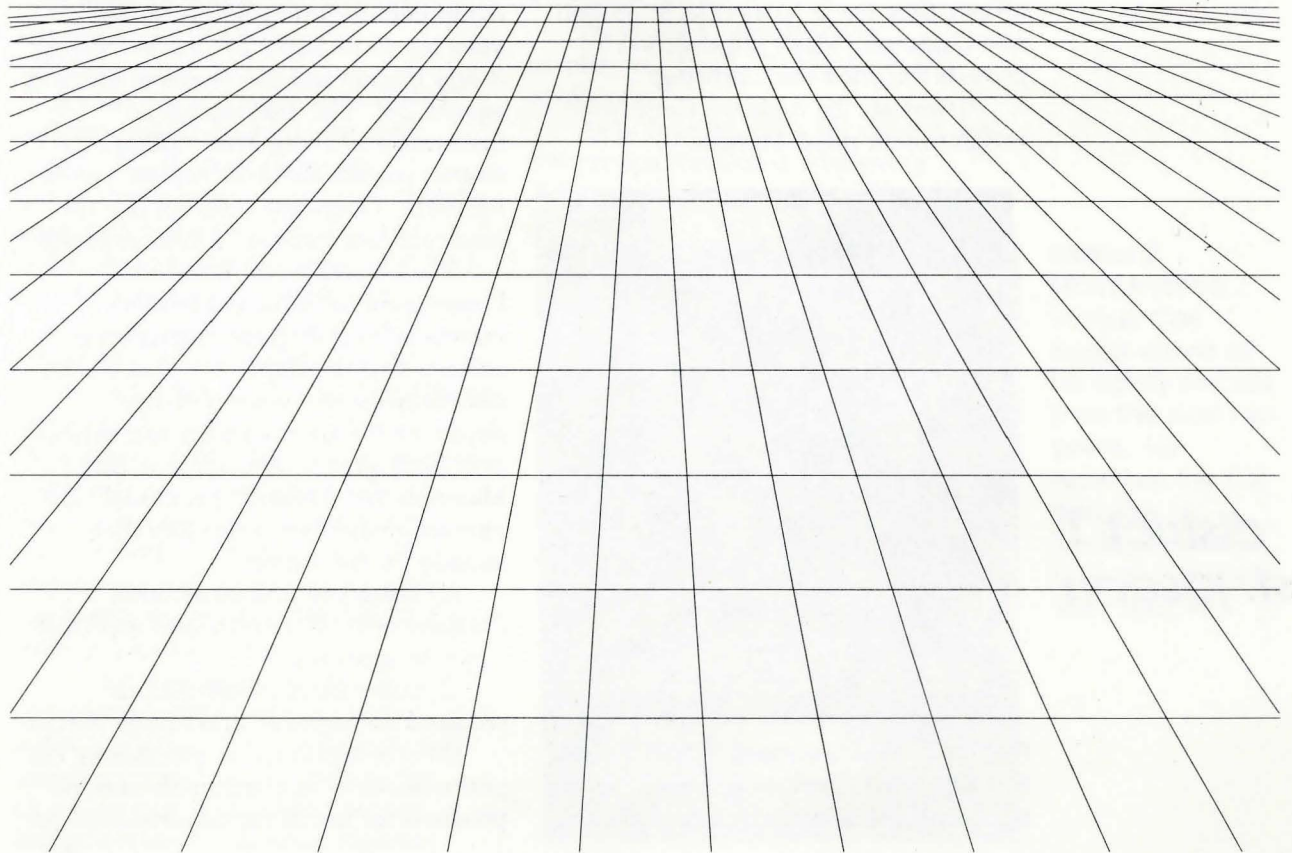
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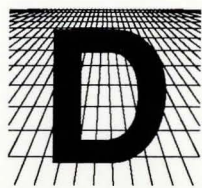
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districts





District 1 is made of 12 counties in northwest Missouri; the district office is in St. Joseph. There are about 485 employees working in seven departments.

The Maintenance and Traffic Department is divided into 10 areas, which comprise 32 sub-areas throughout the district. These sub-areas and a couple special crews have performed much concrete replacement on the interstate system this past year. The installation of liquid calcium chloride tanks and dispensers was completed at all sub-areas that contain interstate or primary routes. MHTD purchased and graded a new site for the Gallatin Maintenance Building; the building contract will be let in 1991.

As of June 30, 1990, the district had 318 groups enrolled in Missouri's Adopt-A-Highway program.

The district's earthquake plan was reviewed and updated to include the designation of personnel and equipment that will be used to respond to a state emergency.

District 1 has three resident engineer offices; they are in Maryville, St. Joseph and Cameron. Major construction projects included the following:

*Interstate 29, Atchison County — weigh station rehabilitation;

*Interstate 35, Harrison County — resurfacing;

*Interstate 35, Daviess County — resurfacing;

*Route 71, Nodaway County — resurfacing;

*Route 69, Daviess/DeKalb counties — resurfacing;

*Route 136, Nodaway County — remove old railroad abutments;

*Interstate 29, Interstate 229, Route 36, various counties — installation of flexible delineators; and

*Route 136, Atchison County — repair substructure and paint bridge over Missouri River.

The Design Department installed Computer-Aided Design and Drafting (CADD) system equipment to prepare for the gradual shift of design work to computer generation.

There were 10 projects awarded in District 1 totaling \$14,447,000 in construction costs. In addition, 15 county road bridges with bids totaling \$3,833,000 were let under the Off System Program monitored by the district liaison engineer.

The Equipment and Procurement Department maintains the district's equipment including 45 passenger vehicles, 40 pickups, 200 trucks (mainly dump trucks) and 280 pieces of off-road equipment. This fleet equals an investment of about \$10.9 million; the district spends about \$.7 million yearly for parts. Operating costs for the 12-county area are about \$2 million yearly.

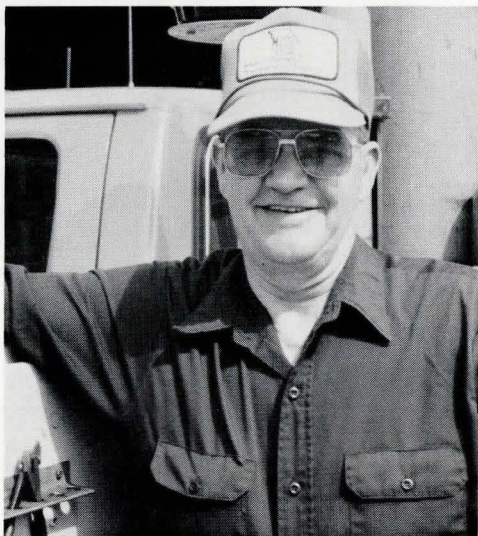
The Materials and Research Department samples and tests all materials used in the maintenance and construction of roadways. This work determines compliance with the department's specifications and insures only high quality products are used. Materials and Research personnel have various areas of responsibility that include the following:

(1) designing and monitoring Portland cement concrete and asphaltic concrete mixtures;

(2) sub-surface investigations required for highway and bridge design;

(3) investigating and monitoring the performance of new materials and/or products for use in the department; and

district 1 st. joseph



District 1 Field Mechanic Clair V. Lee is a longtime department employee; he came on board in 1955.

(4) sampling and testing for the Federal Highway Administration. During fiscal year 1990, Materials personnel inspected 681,625 tons of various types of aggregate.

The Right of Way Department has five employees; this department acquires right of way for projects, maintenance lots or other department projects. It also handles the sale of excess property for the district.

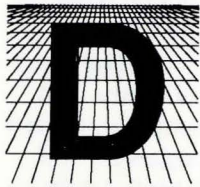
District 1 conducts cardiopulmonary resuscitation/first-aid

classes and commercial drivers' training for employees. Pre-retirement meetings and service award dinners are held each year for employees.

District 1 has had 12 employees selected as department Employee of the Month award-winners.

The district also has many activities such as the annual Employees' Association softball tournament to raise money for a needy family at Christmas, pitch tournaments and steak dinners for employees who are retiring.

district 1 continued



District 2 oversees highway activities in north central Missouri. The 14 counties of District 2 are Adair, Carroll, Chariton, Grundy, Howard, Linn, Livingston, Macon, Mercer, Putnam, Randolph, Saline, Schuyler and Sullivan; these 14 counties contain more than 8,000 square miles. Within this 8,000 square miles are 3,746 miles of highway — 24 miles of interstate, 733 miles of primary and 2,989 miles of supplementary roads.

Eleven maintenance areas with 32 buildings maintain this large road system. In addition, there are five special crews in two locations to handle tasks such as signing, striping and bridge and pavement repair. District 2 has 341 maintenance employees.

The Design Department has 30 employees, which are headquartered at the district office in Macon. The district office also has the Right of Way Department with eight employees, the Fiscal Services Department with 11 employees and the Equipment and Procurement Department with 28 employees, which includes 15 field mechanics assigned to the district's maintenance buildings.

Of the nine Materials and Research Department employees in District 2, two are at Marshall. Their main duty is to inspect precast bridge beams at the Quinn precast plant. Most precast bridge beams for Missouri highway

projects originate here. The two District 2 inspectors make sure the beams are built according to department plans and specifications.

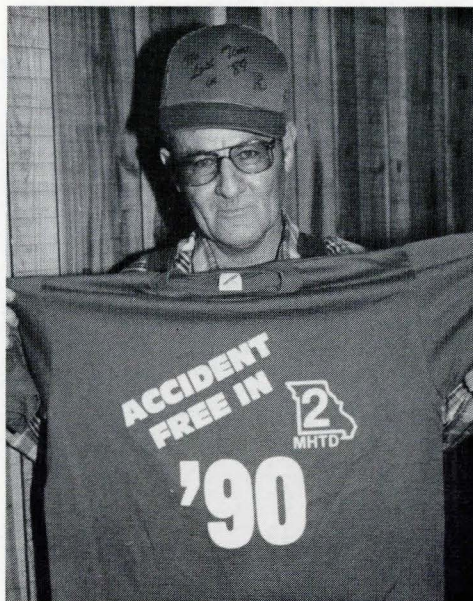
Three resident engineers working from four offices manage the district's construction work. Major construction projects include the following:

- *four-laning Route 63 south of Macon;
- *relocating a portion of U.S. 65 in southern Mercer County;
- *relocating and rebuilding Route 11 east in Kirksville.

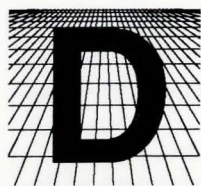
There are 41 construction employees. In all, District 2 has 469 employees.

As of June 30, 1990, the district had 299 groups enrolled in Missouri's Adopt-A-Highway program.

district 2 macon



District 2 Maintenance Worker Carl Boggs shows off his safety awards from the past two years. He received the hat and shirt for having no lost-time accidents in 1989 and '90.



district 3 hannibal

istrict 3, headquartered at Hannibal, encompasses the area of Audrain, Clark, Knox, Lewis, Lincoln, Marion, Monroe, Montgomery, Pike, Ralls, Scotland, Shelby and Warren counties. Within its jurisdiction, District 3 has 3,609 miles of two-lane highways. In all, 403 people work at the Hannibal district. The district has 10 subareas, 38 maintenance buildings and two resident engineer offices at Hannibal and Mexico.

The district's construction projects include the following:

*Interstate 70 in Montgomery County, \$43,086 — rest area beautification at Danville, east and west-bound lanes; completed Oct. 24, 1989.

*Route 15 in Monroe County, \$1,443,591 — bridge replacement over Elk Fork Salt River, one mile south of Paris, with new roadway and pavement to make tie-ins with existing pavement; 0.603 miles; completed Dec. 6, 1989.

*Route 54 in Audrain County, \$140,787 — Grading, shaping shoulders, constructing culverts, cold milling and asphalt resurfacing from Route K north for 0.8 mile in Laddonia; 0.732 mile; completed Nov. 4, 1989.

*Route 54 in Audrain County, \$1,274,299 — Grading, guard rail, drainage and constructing bridges from the Callaway County line to Route D;

3.722 miles; 65 percent complete.

*Route 19 in Audrain and Ralls counties, \$438,745 — Cold milling, bridge rehabilitation and asphalt resurfacing from Route 154 east of Perry to Route 54 in Audrain County; 10.551 miles; completed Dec. 18, 1989.

*Route 6 in Knox County, \$827,718 — Cold milling, bridge deck rehabilitation and asphalt resurfacing from Route 15 (south junction) east to Lewis County; 13.027 miles; 1 percent complete.

*Route 6 in Knox County, \$8,135 — Asphalt resurfacing from 2nd Street to 5th Street in Edina; 0.192 mile; 1 percent complete.

*Route 15 in Knox County, \$899,509 — Asphalt resurfacing and bridge rehabilitation from Route 6 (south junction) south to Shelby County line; 18.913 miles; 1 percent complete.

*Route 24 in Marion county, \$299,336 — Cold milling, bridge deck rehabilitation and asphalt resurfacing from 0.8 mile south of Route 61, south to Route 36; 2.976 miles; completed Oct. 23, 1989.

*Route 79 in Pike County, \$581,260 — Bridge deck rehabilitation and asphalt resurfacing from Clarksville south city limits to the Lincoln County line; 10.709 miles; completed Oct. 7, 1989.

*Route 61 in Ralls County, \$3,087,194 — Grading, drainage, bridge and interchange construction; from 0.7 mile north of Route 19 to 0.4 mile south of Route 19; 1.132 miles; 59 percent complete.

Throughout the past fiscal year, the Materials and Research Department has inspected 23 quarries, eight sand producers and one mineral-filler producer. These locations produced 1,337,180 tons of aggregate for state use.

This department also inspected three cement plants and two oil terminals; this resulted in inspection reports for 25,651 tons of cement and 3,824,231 gallons of asphalt.

Materials and Research personnel calibrated 16 concrete ready-mix plants for construction and maintenance work and designed 14 asphalt and 18 concrete mixes for construction work.

District 3 Senior Highway Design Technician Charlie Parker checks and re-checks his calculations.



This department provided inspection at three concrete precast plants where temporary traffic barriers, drop inlets, pipe, earth panels, concrete girders and deck panels are cast.

In all, 925 general material samples were submitted to the department's Central Laboratory in Jefferson City. Soil survey reports were completed for eight construction projects.

District 3's territory has some unique features. For example, in District 3 the scenic Great River Road

follows Route 79 from Hannibal to Old Monroe, and the Lewis and Clark Trail follows Route 94 in Warren and Montgomery counties. The Mark Twain Lake and Clarence Cannon Dam are recreational attractions in District 3.

The district office and garage buildings were modified, and the Computer-Aided Drafting and Design (CADD) system was implemented fully.

As of June 30, 1990, the district had 338 groups enrolled in Missouri's Adopt-A-Highway program.

district 3 continued



District 4 oversees the highway and transportation system for west central Missouri. It is headquartered in Kansas City at 5117

East 31st Street.

The district is made up of eight counties: Cass, Clay, Henry, Jackson, Johnson, Lafayette, Platte and Ray. The district has 39 administrative personnel, 115 construction personnel, 70 design employees, 31 equipment and procurement employees, 7 legal employees, 388 maintenance and traffic personnel, 28 materials and research employees, 1 employee from personnel and 16 right of way employees. In all there are 695 District 4 employees.

The Maintenance and Traffic Department maintains 2,716 miles — 334 miles of interstate, 669 miles of primary and 1,713 miles of supplementary roads. There are 39 maintenance buildings under the supervision of nine area supervisors and nine special maintenance supervisors.

As of June 30, 1990, the district had 575 groups enrolled in Missouri's Adopt-A-Highway program.

MHTD built new maintenance facilities at the Stadium Complex and at Windsor.

The Construction Department has seven resident engineer offices. The major project under way is the Bruce R. Watkins Drive. The project's estimated cost is \$200 million; it is scheduled to be completed in 2002. The project's total length is 10 miles. Two offices have new department-owned buildings with

more workspace and two bay garages.

The Design Department has eight squads preparing plans for roadways. This department also prepares all agreements and administers various programs with county and city governments. District 4's Design Department is working with the city of Kansas City to develop a special project at the Bruce R. Watkins Drive (formerly known as the South Midtown Roadway). There will be extensive landscaping, aesthetically enhanced bridges and a jogging trail. This is a good example of what city/state cooperation can achieve.

The Right of Way staff is comprised of seventeen right of way personnel and two secretaries. This staff cleared the right of way for several construction project lettings including part of the Bruce R. Watkins Drive, Route 33 in

district 4 kansas city



District 4 Traffic Studies Engineer Garland Wong works with signals and lighting for MHTD's Kansas City area district.

district 4 continued

Kearney, Route 58 in Belton and Route T in Platte County. Right of Way personnel also acquired right of way for Route 291 in Independence. This was a major project involving approximately 100 parcels.

Right of way valued at nearly \$3.6 million was acquired during the fiscal year, and relocation benefits amounting to \$192,796.13 were paid to parties affected by district projects.

The Materials and Research Department inspects materials used in the district's highway construction and maintenance and performs inspections for other districts and states.

The district has 698 pieces of rental equipment that are maintained by 17 field and five shop mechanics.

The Legal, Personnel and Fiscal Services Departments offer support services for the district.

District 4's American Red Cross Standard First-Aid Program trained 214 employees. Four of these individuals have used their first-aid skills in life-saving emergencies.

Service awards honored 107 employ-

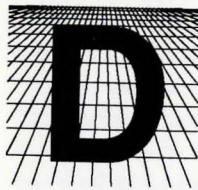
ees with 1,800 total years of service. There were two 40-year employees in this group.

The district's first Chat With the Chief was held Oct. 30, 1989, with 35 employees meeting Chief Engineer Wayne Muri at Burr Oak Woods Urban Park in Blue Springs.

District Engineer Bob Chappell hosted a meeting for 10 department retirees at the district office. Chappell gave an overview, and the department heads gave a brief presentation on activities in their areas. Tours of the district office and the new 39th Street maintenance and traffic facility were conducted.

The district hosted secretaries from District 1, 7 and 8 for two days of "Professional Secretary" training along with 13 District 4 employees.

Materials and Research and Construction employees remodeled the district office basement east wing. The finished project provides a district conference room and offices for the Legal staff, Right of Way appraisers, Personnel Office and Credit Union.



District 5 has seven departments including fiscal services, equipment and procurement, maintenance and

traffic, construction, design, right of way and materials and research. The district has approximately 515 employees. There are 11 maintenance areas, 43 sub-area buildings, five special crews and five construction project offices.

The district covers a land area of 7,787 square miles and encompasses the 13 counties of Benton, Boone, Callaway, Cole, Camden, Cooper, Gasconade, Maries, Miller, Moniteau, Morgan, Osage and Pettis including the Lake of the Ozarks area and the cities of Sedalia, Columbia and Jefferson City. The district oversees 78 interstate miles, 819 miles of primary system highways and 2,558 miles of supplementary system roads.

The major construction projects in District 5 are as follows:

*the construction of a companion Route 54 Missouri River Bridge, reconstruction of Route 54, the tri-level interchange and other interchanges in Jefferson City;

*Route 740, Boone County — widening from two to four lanes;

*Route 163, Boone County — widening from two to four lanes;

*Route 54, Callaway County — 7.3 miles relocation around Auxvasse from Audrain County Line to north of Interstate 70;

*Route 87, Moniteau County — bridge replacement;

*Route 87, Cooper County — relocation and bridge replacements over Petite Saline and Clark creeks;

*Route 50, Osage County — relocation and bridge replacements over Laughlin and Linn creeks;

*Route 54 Business, Camden/Miller Counties — widening and resurfacing through Bagnell Dam Business Loop;

*Route VV, Boone County — bridge replacement over Rocky Fork Creek;

district 5 jefferson city

*Route WW, Boone/Callaway counties — relocation and replacement over Big Cedar Creek;

*Route 70, Boone County — replacement of eastbound bridge over Perche Creek;

*Route 70, Callaway County — replacement of eastbound bridge over Auxvasse Creek; and

*Route E, Benton County — bridge replacement over Brush Creek.

As of June 30, 1990, the district had 469 groups enrolled in Missouri's Adopt-A-Highway program.

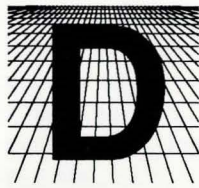
Growing Together, a beautification program that combines the resources of cities and industry with the involvement

of MHTD and incarcerated personnel, has expanded into the city of Columbia.

district 5 continued



District 5 Inspector Jim Miller knows what it's like to "walk steel" on bridges such as the Missouri River bridge at Jefferson City.



District 6, which is headquartered in Kirkwood, is responsible for the highway and transportation system in the St. Louis area. The district is comprised of St. Charles, St. Louis, Jefferson and Franklin counties and the city of St. Louis. The district employs 823 full-time employees.

The Maintenance and Traffic Department has 29 maintenance buildings supervised by nine area supervisors. Twelve special supervisors oversee operations such as signals, lighting, striping, landscape and special repairs. This department maintains 1,475 miles of highway including 222 miles of interstate. The district is also responsible for 629 signal installations.

The construction department has 10 resident engineer offices staffed by 174 engineers and technicians. Major construction projects include the following: *Route 115 bridge across the Missouri River — substructure is nearing completion, and contracts have been awarded for the fabrication of the truss and girders;

*construction began on a major interchange at Route 115 and Interstate 270;

*work continues on the major interchange at Route 40 and I-270.

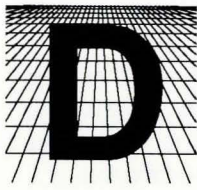
The district Maintenance and Traffic Department administers a very successful Adopt-A-Highway program. As of June 30, 1990, the district had 761 groups enrolled in the program.

District 6 was very proud to have Bob Orange, a senior highway designer in the Design Department, chosen as the April 1990 Employee of the Month.

District 6 employees from left Maintenance Worker Jason Hicks, Maintenance Crew Leader Mark Hill and Special Maintenance Supervisor Sam Hoke hang a new Welcome to Missouri sign in St. Louis.

***district 6
st. louis***





District 7, headquartered in Joplin, has 418 active full-time employees: 19 administrative, 38 construction, 27 equipment and procurement, 280 maintenance and traffic, nine materials and research, seven right of way and 38 design. Approximately 42 temporary employees and 47 summer students were employed during 1990.

The district has 37 maintenance buildings; the Joplin Maintenance Building and sign and signal shop are within the district office complex. There are three resident engineer offices located at Neosho, Carthage and Nevada.

The district maintains 3331 miles of highway; this includes 60 miles of interstate, 729 miles of primary and 2542 miles of supplementary roads.

The district striping crew completed 5,948 miles of striping this year and put a new bulk paint storage facility into operation. A new striper capable of using water-based latex paint was put into operation also. The district maintains more than 42,000 signs with each inspected annually.

Permit inspectors report that 1,122 permits were issued. Of the 1,122, 75 were for commercial entrances, 246 for private entrances and 801 for excavation permits.

District 7, the southwest district, encompasses the 11 counties of Barry, Barton, Bates, Cedar, Dade, Jasper, Lawrence, McDonald, Newton, St. Clair and Vernon.

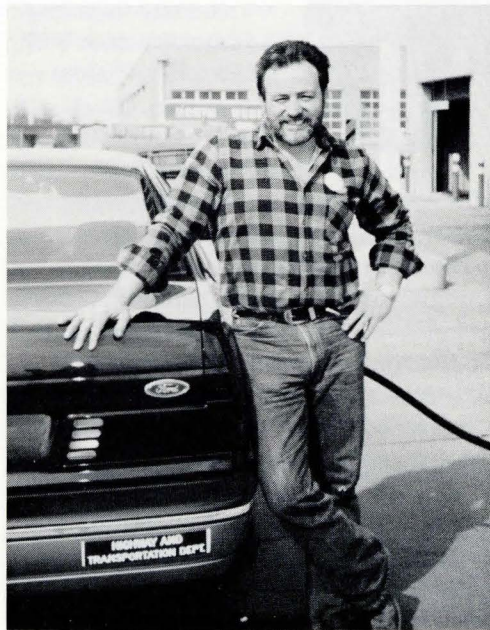
Major construction projects in District 7 during the period of July 1, 1989, to June 30, 1990, included the following:

- *RS-BRS-859(8) in Newton County — bridge replacement south of Route 60;

- *7-P-32-322 in Cedar County — bridges and one 24-foot pavement south of El Dorado Springs;

- *DE-BOIL(803) in Jasper County — bridges and grading on Alternate 71 from Carthage to Interstate 44;

- *F-54-1(19) in Vernon County — shouldering and resurfacing from Route



Service Attendant Frank Gates works at the District 7 district office in Joplin.

district 7 joplin

C to Route AA;

- *F-71-2(49) in Barton County from Lamar to north of Route C;

- *F-BHF-71-2(48) in Newton County — cold milling and resurfacing Alternate 71 from Route 60 to Route 71 with left turn lanes at four intersections;

- *RS-831(7), RS-831(8), RS-831(9), RS-831(10) in Jasper and Barton counties — resurfacing and shouldering on Route 43 from Route K to Route 96;

- *RS-855(8) in Jasper County — resurfacing and shouldering from Route HH to Business Loop I-44;

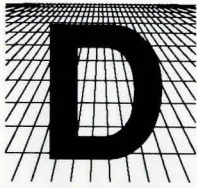
- *F-71-1(32) and HES-71-1(31) in Jasper and Newton counties — cold milling and resurfacing Route 71 in Joplin;

- *F-FG-71-1(25) in Newton County — replacement of a railroad bridge and signalized intersection at Route 86 in Neosho; and

- *F-BRF-71-2(76) in Jasper County — grading, bridges and new SBL on Route 71 from Jasper to Carthage.

Between July 1, 1989, and June 30, 1990, Maintenance Crew Leader Tim Houdyshell received an Employee Suggestion System award.

As of June 30, 1990, the district had 360 groups enrolled in Missouri's Adopt-A-Highway program.



istrict 8 encompasses a 12-county area with 3,648 miles of state highways. The district boundaries extend north to

Hickory County, which includes the Pomme De Terre Lake area. To the east are Laclede, Webster, Wright and Douglas counties; they include the cities of Lebanon, Mountain Grove and Ava. To the south, District 8 runs to the Arkansas state line. This area includes the Ozark Mountain region, home of Branson and the lakes area.

The Ozark Mountain Region is southwest Missouri's leading tourist attraction with the Branson area expecting more than 4.5 million tourists this year. District 8's main metropolitan area is Springfield with a population of approximately 150,000 people.

District 8 has 474 employees with the majority of employees working from 39 maintenance buildings throughout the district and project offices in Springfield and Buffalo.

Four new positions were created in 1989 and 1990. They are as follows:

- *assistant maintenance supervisor, who supervises routine or special maintenance activities at large maintenance buildings;

- *senior highway maintenance supervisor, who supervises major highway maintenance activities at large maintenance buildings;

- *intermediate highway designer, who prepares plans, strip maps and special drawings for roadway projects; and

- *intermediate construction inspector, who inspects routine and specialty construction items and directs inspecting and surveying of routine projects.

The district office appearance continues to stand out because of the efforts of the Building Maintenance and Roadside Enhancement crews. On May 10, 1990, Springfield's Northside Betterment Association honored the district office for having the most attractive and best maintained buildings and grounds on Springfield's northside. On the inside, the appearance of the

Design Section continues to change. With the implementation of a Computer-Aided Design and Drafting (CADD) system, conventional drafting tables are being replaced with modern workstations to accommodate the CADD equipment.

Field Mechanic Wayne Woody was named the July 1989 Employee of the Month, and District Design Engineer Gary Ludlam was the February 1990 Employee of the Month.

District 8 received the Bronze Award for employee contributions to the United Way campaign.

The department chose District 8 to evaluate the CADD system, which completed two projects for letting in July 1989. The system was used on many projects in various stages of design in fiscal year 1990. The installation of District 8's Local Area Network (LAN) came in December 1989. This connected 18 existing and 15 new personal computers to a central source for application programs and files.

The district's construction season was busy, especially in the Branson area. Part of business routes 65 and 76 were widened and resurfaced; a 1.5-mile project was completed, which upgraded Route 65 just north of Branson to four lanes. A 20-mile section of Route 65 north of Branson was resurfaced and restriped to provide climbing lanes.

In the Springfield area construction continues on the James River Freeway, which is tentatively scheduled for completion in October 1991.

Other major construction projects are as follows:

- *Interstate 44 — Greene County;

- *Interstate 44 — Laclede/Webster counties;

- *Route 65 — Dallas County;

- *Route 54 — Hickory County;

- *Route 5 — Laclede County;

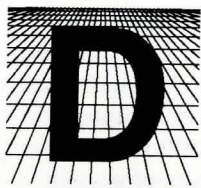
- *Route 83 — Polk County;

- *Route F — Taney County; and

- *Business Route 60 — Wright County.

As of June 30, 1990, the district had 593 groups enrolled in Missouri's Adopt-A-Highway program.

district 8 springfield



istrict 9, headquartered in Willow Springs, encompasses the 13-county region of Carter, Crawford,

Dent, Howell, Iron, Oregon, Pulaski, Phelps, Ripley, Reynolds, Shannon, Texas and Washington counties.

The district's Maintenance and Traffic Department has an authorized staff of 11 office and 286 field personnel. They maintain the largest district in the state, which includes 3,726 miles of roadway. Of this, 78.5 miles are interstate; 1,048 miles are primary routes, and 2,599 miles are supplementary routes. These routes are maintained from 36 maintenance and three special crew buildings, which are divided into 11 sub-areas.

As of June 30, 1990, the district had 239 groups enrolled in Missouri's Adopt-A-Highway program.

District 9's Construction Department has 55 employees. This construction season the district oversaw construction on Route 60 between Willow Springs and Mountain View, Route 60 east of Winona and Route 8 west of Steelville. New river bridge projects were under way on Route 21 north of Caledonia in Washington County and north of Centerville in Reynolds County. The Route 160 bridge over the Current River is under construction to replace the existing bridge, which was built in 1928.

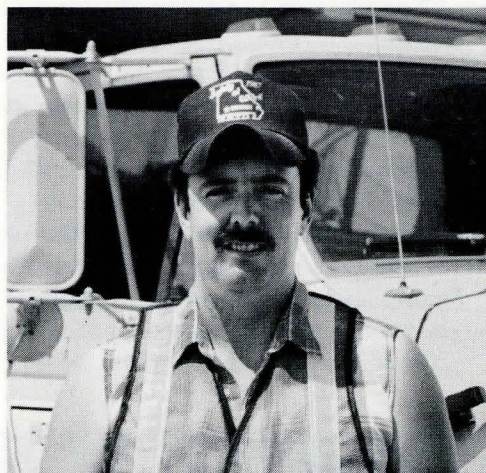
Various asphalt overlays are in progress throughout the district. All construction projects are under the supervision of three resident engineers whose offices are in Willow Springs, Van Buren and Rolla. MHTD built a new resident engineer's office in Willow Springs for personnel from the Mountain Grove office, which was closed this year.

The Right of Way Department's seven employees have been in the real estate business during fiscal year 1990. They acquired right of way for highway construction totaling \$570,191. This included 94 parcels — 83 by negotiation settlement and 11 by condemnation or 88 percent by negotiation and 12 percent

by condemnation.

Payments totaling \$203,549 were made this year under the Relocation Assistance and Payment Program to assist displaced families in relocating. During fiscal year 1990, 31 relocation claims were processed and paid. Also, appraisals were obtained on 79 parcels. Receipts from excess property totaled \$14,750. Rental of property acquired for future construction earned \$2,000.

The District 9 Design Department has 32 employees. Currently they are designing 64 projects. Major projects



district 9 willow springs

**District 8
Maintenance
Worker Kevin
Clayton works at
the Walnut
Shade
Maintenance
Building.**



**District 9
Maintenance
Crew Leader
Larry Turner
works at the
Ellington
Maintenance
Building.**

include the upgrading of Route 60 from Willow Springs east in several locations including a new bridge over the Current River at Van Buren. Route 63 is being

upgraded near West Plains.

The Fiscal Services Department has eight office personnel and two maintenance personnel. They handle payment of payrolls and commercial and equipment invoices. They're also responsible for daily and monthly reports from the maintenance buildings and construction offices. Further responsibilities include life and health insurances, workers' compensation, credit union, building maintenance and district correspondence.

The District 9 Equipment Division has 32 employees: 18 field mechanics and helpers, 11 shop personnel and three stockroom employees. In the 13-county district, they take care of about 546 units including 45 cars, 44 pickups and carryalls, 195 trucks, 87 tractors, 43 loaders, 39 distributors, 48 motorgraders and 45 other units. The stockroom personnel oversee a parts and supplies inventory of \$324,776 and have an average monthly sale of \$31,000.

The Materials and Research

Department has nine employees. They inspect 24 quarries, 123 gravel sources and 14 ready-mix plants. In fiscal year 1990, they inspected 741,123 tons of aggregate including 579,027 tons of crushed stone; 102,415 tons of gravel; 28,628 tons of sand and 31,053 tons of porphyry.

Materials personnel inspected 1,871,425 gallons of emulsified asphalt. Many materials such as calcium chloride, sodium chloride, paint, corrugated metal pipe, reinforced concrete pipe and others were inspected, too.

District 9 has had two Employees of the Month. Bob Woodring, district highway design engineer, was the October 1983 honored employee. Steve Hutchison, field mechanic, was the May 1986 Employee of the Month.

The district office soon will have a new addition with more space and new offices. The old facilities will be remodeled as soon as the new offices are occupied.



rom 1921 through 1987, District 10 encompassed the counties of Scott, New Madrid, Mississippi, Pemiscot, Dunklin, Ripley, Butler, Wayne, Stoddard, Bollinger, Cape Girardeau and Madison. With the realignment of the district in 1988, the counties of Perry, Ste. Genevieve and St. Francois were added. And Ripley County was transferred to District 9; however, District 10 kept the Naylor Maintenance Building in Ripley County. Now the district consists of 14 counties in southeast Missouri, covers 7,984 square miles and has 3,858 road miles.

District 10 has approximately 527 full-time salaried employees. During fiscal year 1990, nine employees retired; 18 permanent employees were hired. Seven employees transferred from the district; one employee transferred into the district. Two employees resigned; one employee was released, and one employee died. Thirty employees received promotions. The district hired 39 college students and 56 seasonal maintenance workers. The district

processed 2,301 new employment applications.

The District 10 Highway and Transportation Employees' Credit Union, managed by the district personnel services agent, serves the financial needs of the state highway patrol and highway and transportation department members. Total membership was 936 with total assets of \$3,544,696.94. During the past fiscal year, 343 loans totaling about \$1,208,750.83 were processed.

District fiscal services employees processed about 7,308 checks to suppliers; checked and extended totals on more than 11,000 daily crew reports; added more than 630 items to the tool inventory; took inventory at 36 maintenance buildings, five resident engineer offices and the district office; and verified that 3,555 pieces of equipment were in service and tagged properly. In all, 630 new items were inventoried, and 595 items were deleted from the inventory. Other items included processing commercial invoices, physical inventories and usage reports for 812,000 gallons of petroleum products.

district 10 sikeston

Fiscal services employees verify time for personnel including full-time, temporary, seasonal and overtime.

This department also processed 107 property damage claims, 98 auto liability claims and 90 new workers' compensation claims. Fiscal Services issued about 1,217 overdimension permits from June 30, 1989, to July 1, 1990.

During the past year, the district installed fencing for additional security at the grounds. A new conference room was built. A computer room for the Computer Aided Drafting and Design (CADD) system was finished. New wiring was installed in the district office and garage to accommodate computers for the building.

Partitions were installed in maintenance, materials, design, construction and fiscal services; new carpet and tile was purchased in June for the district office building. New storage for the garage was built to house tires, oil and other products. A new garage door with an electric opener was installed for the car wash. Two microwave ovens and two refrigerators were purchased for the district office and garage because MHTD changed to a 30-minute lunch period.

The building maintenance and grounds section has three full-time employees. Besides providing janitorial service at the district office, they also maintained the heating and air-conditioning and provided janitorial service to two other MHTD facilities in Sikeston.

The Right of Way Department is located about a half-mile from the district office. It has 11 employees. This department has acquired 58 parcels on 15 projects with 29 parcels negotiated and 29 condemned. Also, the district processed right of way relinquishments on many excess parcels of land and made appraisals on changes of access.

The Materials and Research Department inspects the materials used to construct and maintain District 10 highways. Materials had 12 full-time, two seasonal and two summer employees during fiscal year 1990.

Materials has many projects where

employees are performing independent assurance sampling and federal-aid sampling and testing. They verify that the job control or acceptance inspector follows proper test procedures and that the equipment being used for acceptance testing is working correctly. This testing is performed only on federal-aid projects.

The district soils and geology technologist has completed nine soil surveys, sampled ten quarries and investigated numerous slides.

The Materials and Research Department is helping on a statewide research project called "Life Expectancy Determination of Corrugated Metal and Reinforced Concrete Pipe." The project will compare these two types of roadway crossroad drainage pipe.

Materials and research personnel have inspected various materials for the district Maintenance Department such as glass beads, brush and weed killers, grader and maintainer blades, sodium and calcium chloride for ice control,

district 10 continued



Signs like this are common sights when department workers are on the road.

paint, anti-freeze, gear oil and grease, hydraulic fluid, lubricating oil, asphalt and various aggregates.

In District 10, personnel inspected the following quantities: various aggregates — 1,445,530 tons; cement — 54,319 tons; asphalt — 7,417,054 gallons; black and epoxy coated reinforcing steel — 1,129,454 pounds; corrugated metal pipe — 15,883 linear feet; reinforced concrete pipe — 8,386 linear feet; reinforced concrete drop inlets — 107 each; concrete flared end sections (metal and concrete) — 86 each; pipe collars — 10; concrete manholes — 14; plastic joint compound — 8,750 pounds; reinforced concrete I-girders — 175; reinforced double tee-girders — 101; reinforced bridge deck planks — 1,485; precast box culverts — 24; precast concrete median barriers — 2,077 linear feet; traffic signals — 24 poles, 33 arms, 96 anchor bolts; pull boxes — 12; PVC conduit and water lines — 4,021 linear feet; clay sewer pipe — 803 linear feet; ductile iron pipe — 385 linear feet, 269 fittings; copper water line — 420 linear feet, 24 fittings; guard rail and fencing — 3,675 linear feet; fertilizer — 256,766 pounds; paint — 7,535 gallons; welded wire fabric — 941,641 square feet; and calibration of concrete R/M plants — 16.

The Design Department has 37 employees with five design squads and two field survey crews. Twenty-one projects totaling 54 miles were let for contract during fiscal year 1990 at a cost of \$23,465,000. Five design plans were completed and made ready for contract during the fiscal year. These plans totaled 21 miles at a cost of \$12,054,000. In all, the district handled 26 design plans costing \$35,519,000 for a total of 75 miles.

Projects are on all systems, and costs range from \$76,000 to more than \$7,350,094. Nine new bridges and seven bridge rehabilitations are included. This work involves about 60 miles of resurfacing at a cost of about \$14,896,000.

Not included in the above tabulation are plans for 128.4 miles of maintenance contract leveling course projects costing more than \$2,015,000. When added to the above tabulation, the total

construction cost of projects for which plans were let for contract and projects for which plans are complete total more than \$37,534,000. This figure does not include right of way costs.

The District Design Department has reviewed the federal-aid off-system bridge program including 14 structures amounting to about \$2,346,000. Also federal-aid urban (FAU) funds of almost \$298,000 have been processed during the past year.

Design personnel have assisted with 14 groundbreaking and 16 ribbon-cutting ceremonies.

The Route 34 signal project at William Street in Cape Girardeau includes the design and construction of a box culvert. This culvert is part of a city flood control project designed by the Corps of Engineers and funded by the city.

The district designed a bridge project on Route 164, Pemiscot County, for the Corps of Engineers. This project is across Main Ditch No. 9, a unit of the St. Francois Basin Project. The Corps of Engineers is funding the project.

The Construction Department has five resident engineer offices and 80 employees. Fifteen employees work at Farmington, 15 at Cape Girardeau, 14 at Sikeston, 16 at Poplar Bluff and seven at Kennett. There is one district final plans and reports processor.

Thirty-seven projects were completed at a cost of \$22,986,084. Some major projects are as follows:

*Route 53, one project in Butler and Dunklin counties — \$1,557,602;

*Route 60, one project in Stoddard County — \$3,698,432;

*Route 412, three projects in Dunklin County — \$1,885,757;

*Interstate 55, three projects in New Madrid, Scott and Pemiscot counties — \$2,708,776;

*Route 34 in Cape Girardeau and Wayne Counties — \$541,528;

*Route NN in Dunklin and Pemiscot Counties — \$1,041,387;

*Route U in Cape Girardeau County — \$1,017,006;

*Route 51 in Perry County — \$3,623,409;

*Route 61 in Cape Girardeau

***district 10
continued***

County — \$2,647,764;

*active minor supplementary and primary projects — \$2,655,421; and

*completed asphalt leveling projects — \$2,228,275.

The active projects during fiscal year 1990 total \$27,329,155.

During this fiscal year, the Construction Department had the following task forces and quality circles: construction reports and submittal quality circle; earthquake awareness task force; construction manpower management system; field office and building securities task force; construction risk management task force; technicians training task force; bituminous quality circle; structure quality circle; BRO documents and procedure; and survey method and equipment.

The Maintenance and Traffic Department has 12 areas, 36 sub-areas and special crews in Sikeston with about 360 employees.

The district ranks first in highway miles and third in land area. District 10 has 198 miles of interstate, 742 miles of primary and 2,918 miles of secondary roads.

The following is the breakdown by county of the 1,366 state highway system bridges maintained by District 10: Bollinger — 61; Mississippi — 62; Ste. Genevieve — 64; Butler — 109; New Madrid — 142; Scott — 97; Cape Girardeau — 140; Pemiscot — 118; Stoddard — 161; Dunklin — 107; Perry — 50; Wayne — 117; Madison — 60; and St. Francois — 78.

In the past year, the district resurfaced 118 miles of highway with one-inch, machine-laid hot mix leveling course. Maintenance forces resurfaced about 285 miles of road with a cold mix leveling course. District 10 used 75,000 tons of mix to patch and make routine surface repairs. It also mowed 43,000 acres of right of way.

As of June 30, 1990, the district had 279 groups enrolled in Missouri's Adopt-A-Highway program.

Maintenance and traffic employees installed one new signal and replaced two controllers. There were 72 new mobile radios and 28 replacements

added to the fleet.

Snow and ice removal operations were below normal because of a mild winter. Roadway flooding and other weather- and nature-related repairs were about normal.

Concrete deck repair was above normal this fiscal year. The last part of summer 1989 and the early part summer 1990 were both heavy concrete repair periods.

Measures to get district employees in compliance with the commercial driver's license requirements have been implemented and are on schedule.

The District 10 Equipment and Procurement Department maintains and repairs more than 700 pieces of equipment. Besides normal equipment maintenance, there have been several equipment modifications implemented. The district purchased 32 standard trucks. During this period, District 10 readied more standard trucks for operation than any other district.

Three stockroom employees in the procurement section issue local purchase orders, order parts and supplies on requisitions or job tickets,

district 10 continued



**District 10
Maintenance
Worker Krista
Rogers works at
the Risco
Maintenance
Building.**

district 10 continued

check commercial invoices against purchase orders and code items for payment. They post inventory records and make sure they balance monthly, charge labor from job tickets, prepare garage invoices, and keep district tire, battery, gas, oil and other records.

The department implemented Highway Designer Charles Harrison's suggestion to use decimal numbers in lieu of fractions in slope designations. Through the Employee Suggestion System, Harrison received two days of leave with pay and a certificate of recognition. Harrison also received another honor. He was recognized July 13, 1989, at the Mississippi Valley Conference of State Highways and Transportation Officials and rewarded \$1,000 for his contribution to the Strategic Highway Research Program maintenance work zone safety design competition.

The department implemented Senior Secretary Alma Curry's suggestion to provide handicapped parking spaces. She was presented a certificate of recognition through the Employee Suggestion System.

District 10 honored one employee for 40 years of service, seven for 35 years of service, 13 for 30 years of service and 14 for 25 years of service on Nov. 7, 1989. The district also recognized 11 employees with 10 years of service, 17 with 15 years service, and 20 with 20 years of service at a coffee Nov. 8, 1989. In all, 83 employees were recognized during fiscal year 1990.

Bill Taylor was honored as the September 1989 Employee of the Month. He was district design engineer and served the department for 36 years before retiring.

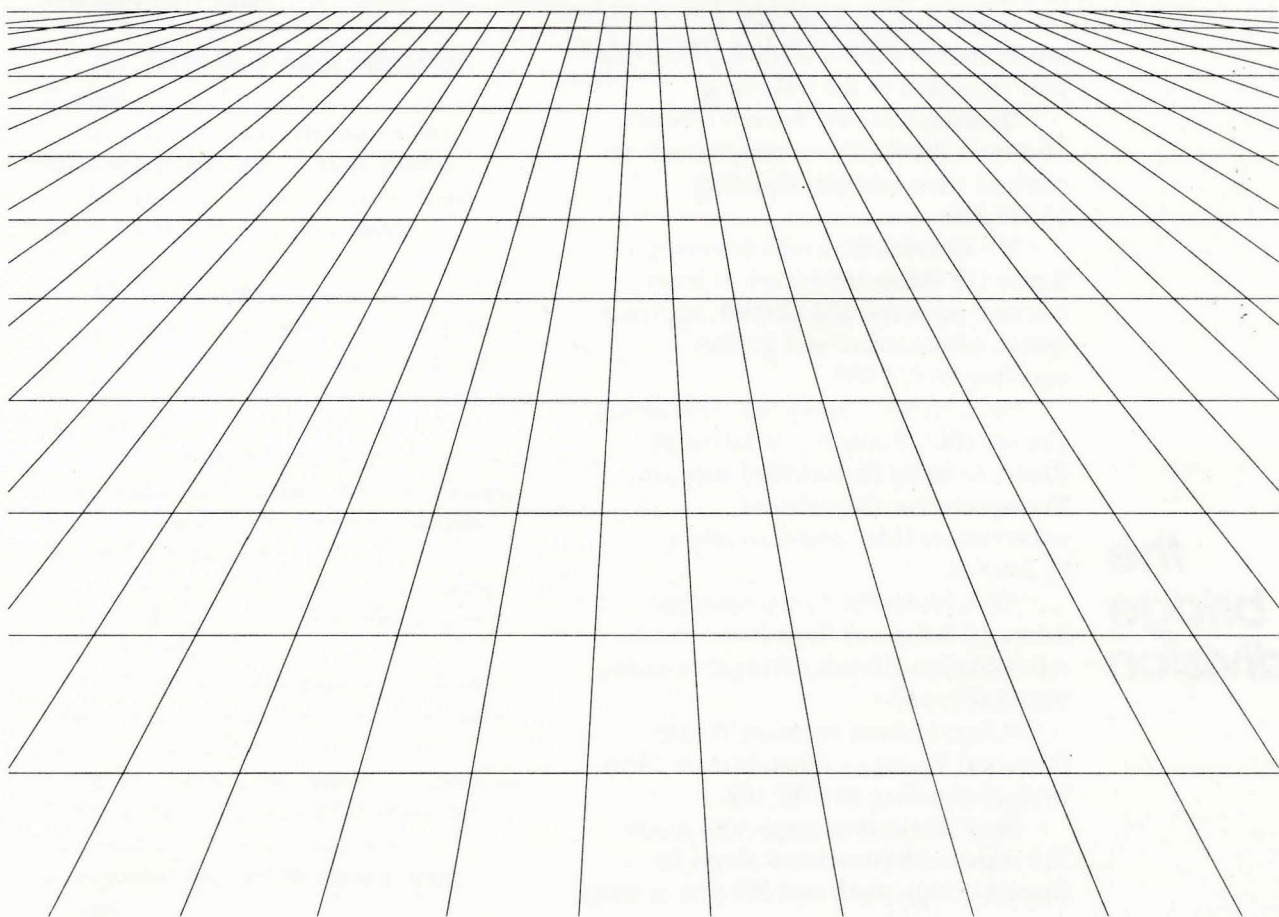
As part of the department's concern for the health and welfare of its employees, District 10 has participated in an in-house cardiopulmonary resuscitation (CPR) and first-aid training sponsored by the American Red Cross. This district has six instructors who certified 36 employees. District 10's goal is to have a trained employee in every work group.

District 10 held its first Chat With the Chief Dec. 6, 1989, at Keener Springs.

Thirty-six employees, representing all areas, participated. District Engineer Bob Sfreddo prepared the meal, which he and Administrative Secretary Jolene Howell served.

On Oct. 4, 1989, District 10 held a pre-retirement seminar for 62 employees and spouses. The Missouri State Employees' Charitable Campaign was held and added 16 Century Club members.

divisions





he Missouri Highway and Transportation Department Bridge Division is responsible for the design, estimating and special

provisions, rating and shop inspection of the state highway system bridges. The division also reviews bridge replacement plans funded through Bridge Replacement Off-System and Federal Aid Urban monies.

During fiscal year 1990, the division completed 60 new bridge and retaining wall designs for letting. Of this number, 50 were designed for major system routes and 10 for supplementary routes.

The total length of new structures contracted during the fiscal year was 14,837 feet at a cost of \$28,899,465. Of these amounts, 2,378 feet were contracted at a cost of \$3,750,503 for the supplementary system.

In addition to the new structure designs, 72 designs were contracted for repairing, widening or extending for 21,290 feet of existing bridges at a cost of \$12,318,532.

Major construction and rehabilitation contracts during the fiscal year consisted of the following:

*Jackson County, Route 71 (South Midtown Roadway) — superstructure contract (two bridges) equaling \$3,958,230;

*St. Charles/St. Louis counties, Route 115 (Missouri River) — truss contract equaling \$14,320,980; approach spans, substructure and girders equaling \$6,924,139;

*St. Charles County (Mo.)/Madison County (Ill.), Route 67 (Mississippi River) — let by Illinois Highway and Transportation Department, substructure (Mo. share) equaling \$1,248,564;

*St. Charles/St. Louis counties, Route 40 (Missouri River) — rehabilitation (Gumbo Bridge) equaling \$4,965,601; and

*Clay/Jackson counties, Route 9 (Missouri River) — rehabilitation (ASB Bridge) equaling \$11,767,182.

Steel fabrication inspectors made 510 trips to 25 fabrication shops to inspect bridge steel, and 285 sets of shop

drawings were processed.

The division was involved in liaison with consulting engineering firms on four major bridge projects.

Two task forces were active in retrofitting bridges for earthquakes and designing vertical stiffeners for plate girder bridges.

Besides structure design, the division rated county and municipally owned bridges as part of the Federal Highway Administration Bridge Replacement and Rehabilitation Program.

Division personnel reviewed programming eligibility for 102 proposed bridge replacement projects, 82 preliminary layouts and 90 sets of plans, specifications and estimates for bridge structures on the Federal Off-System Bridge Replacement and Rehabilitation and Federal Aid Urban Programs.

**the
bridge
division**



he following summary of activity by the chief counsel's office covers the fiscal year July 1, 1989, to June 30, 1990.

(1) Condemnation Cases

- a. Forty-four new petitions were filed from July 1, 1989, to June 30, 1990, involving 282 tracts of land.
- b. Disposition was effected in 138 cases, and 197 exceptions were filed.
- c. There were 24 jury trials reported.
- d. The sum of \$633,419.55 was collected on final judgments where a return from the commissioners' award was due the Missouri Highway and Transportation Commission.

(2) Administrative Hearings

- a. Outdoor Advertising — There were 13 hearings conducted involving 23 signs.
- b. Utility Relocation — Eleven hearings were held.
- c. Relocation Assistance — No hearings were held.

(3) Highway Beautification Cases

- a. Outdoor Advertising — Nine cases were opened; 21 were closed.
- b. Junkyard Cases — Four cases were opened; five were closed.

(4) Tort Cases

- a. General Liability -- Forty-six cases were filed against the commission, and 17 were closed. There were two jury trials reported.
- b. Fleet Vehicle Liability -- Nineteen cases were filed against the commission, and 12 were closed. There were two jury trials reported.
- c. Property Damage — Two cases were filed by the commission, and nine were closed.
- d. Inverse Condemnation — Five cases were filed against the commission, and one was closed.
- e. Workers' Compensation Cases — There were 149 claims filed with the Missouri Division of Workers' Compensation, and 97 claims were closed.

(5) Contractor Cases

No cases were filed against the commission, and two cases were closed.

(6) Miscellaneous Cases

Twenty-six cases were filed against the commission, and seven were closed.

(7) Federal Cases

Nine cases were filed against the commission, and 10 were closed.

(8) Retirement Board Cases

No cases were filed against the commission, and one was closed.

(9) Medical Insurance Plan Cases

Two cases were filed against the commission, and two were closed.

(10) Annexation Cases

One case was filed against the commission, and one was closed.

(11) Miscellaneous

Numerous contracts were prepared and reviewed, legislative bills drafted and reviewed and legal opinions rendered.

**the
chief
counsel's
office**



he Missouri Highway and Transportation Department's (MHTD) Construction Division administers construction contracts.

After the Highway and Transportation Commission awards construction work, MHTD issues a notice to proceed to each successful contractor and establishes contract finances. The division's personnel inspect each project so the department keeps aware of the construction progress.

Today, construction work continues on interstate routes 44, 70 and 270; Route 115 and Route 40 in the St. Louis area; Route 71 in the Kansas City area; Route 21 in the Jefferson County area; Route 54 in the Cole/Callaway/Audrain county area; Route 60 in the Greene County area; and Route 7 in the Cass County area. Construction also continues on a Missouri River bridge at Jefferson City and on the Route 40 and Route 115 Missouri River bridges between St. Charles and St. Louis counties. Repair work began on the A.S.B. Bridge over the Missouri River in the Kansas City area.

Interstate system contracts included upgrading existing dual facilities to interstate standards and implementing the latest safety features. About 76 miles of interstate road are being rebuilt or brought up to the latest safety standards.

The division administered the resurfacing of 1,300 miles of existing pavement with asphaltic concrete during fiscal year 1990; and many bridges were rehabilitated. The division administers the Off-System Bridge Repair Program and the Federal Aid Urban Program. These programs have increased during the fiscal year.

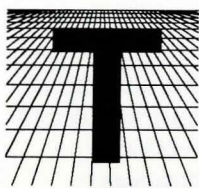
Primary and supplementary system contracts involved new construction, widening and resurfacing projects and bridge replacements. The contracts included rural and urban construction; the projects are financed with a combination of federal aid and state funds.

The division provides supportive services for disadvantaged-owned firms.

MHTD continues to seek out and certify minority and women contractors to help meet the goals of the disadvantaged enterprise program. Bidders on construction projects are obligated to take affirmative action in using disadvantaged business enterprises. Through affirmative action efforts, \$26,466,117 in state and federally assisted contracts and subcontracts were awarded to disadvantaged business enterprises during fiscal year 1990.

The division maintains a reasonable cost of inspecting construction projects by upgrading equipment, using new technology and computer programs and continuing employee training. The division also participates with contractors in a value engineering program, which helps produce an equal or better product at less cost. To date, the department has saved \$145,439 in the program's first nine months.

the construction division



The Design Division prepares the Missouri Highway and Transportation Department's (MHTD) roadway improvement studies. The division also plans and handles the letting of highway project contracts.

MHTD holds meetings and formal hearings to explain the need and purpose of highway improvements and to obtain public comment. Coordination with local, state and federal agencies is required.

During fiscal year 1990, the division obtained tentative location approval on 44 highway improvements holding 15 formal location and design public hearings and several public meetings.

As part of its duties, the Design Division uses aerial photography to conduct photogrammetric surveys early in a project. Field surveys supplement this work and give basic information for plan development.

MHTD is installing a computer-aided design and drafting (CADD) system throughout the Design Division in each district office. The Missouri Highway and Transportation Commission approved purchasing equipment and hiring support personnel for the second phase of installation in December 1988. Mainframe computers and 121 workstations were installed in districts 3, 4, 5 and 6 for 27 highway design squads. The contract cost for Phase II was \$4.6 million.

The department set up a training classroom in Jefferson City and established a department-wide training program for design employees. From July 1, 1989, to June 30, 1990, 196 design personnel each received 72 hours of classroom instruction using CADD.

The commission approved CADD installation for the remaining district offices in January 1990. The estimated equipment and software cost for Phase III is \$3.5 million. This phase will provide mainframe computers and CADD workstations for districts 1, 2, 7, 9 and 10.

MHTD personnel are using CADD for many highway design projects

including bridge replacements, roadway widening and resurfacing, and new alignments.

The Design Division administers the department's value engineering program. Through the program, department personnel apply the value engineering (VE) discipline on selected projects, items, procedures and processes to reduce cost and improve productivity.

During 1990, MHTD completed VE studies on two construction projects and five other areas including procedure standards and specifications with an estimated savings of \$8.7 million. For each dollar of expense to complete the studies, the department saved \$103. In all, 10 employees were trained in value engineering.

The Design Division assesses environmental impacts for each project. This includes air quality evaluation, noise studies and cultural, social and economic considerations. The division finished cultural resource survey reports on 28 projects and reviewed more than 27 in-house. Extensive overviews were completed for three major projects that required an environmental impact statement. These projects were the Page Avenue extension, the Route 115 extension and Route 71 south of Interstate 44 to Arkansas.

Before letting highway improvements, the department acquires right of way, makes arrangements for utility adjustments and obtains permits and licenses from state and federal agencies. The division obtained approval of detail plans for right of way acquisition on 97 projects.

The Disadvantaged Business Enterprise (DBE) program lets businesses owned and controlled by socially and economically disadvantaged individuals or women participate in contracts or subcontracts financed in whole or in part with federal funds. DBE firm participation during fiscal year 1990 was \$30.9 million.

During the fiscal year, the department had one project that used Bridge Discretionary Funds totaling \$4.2 million. Bridge Discretionary Funds help replace major bridges without

**the
design
division**

design continued

using normal federal-aid apportionments.

The Design Division also administers several federal-aid programs that provide funding for cities, counties and rail-highway crossing safety improvements.

The Federal Aid Urban (FAU) Program provides federal funding for streets and highway construction in cities and urban areas with more than 5,000 people. About \$20.2 million was obligated in Missouri cities for this program. The FAU funds generally finance 75 percent of the cost of eligible projects with local jurisdictions providing 25 percent matching funds. During fiscal year 1990, 31 projects were approved for construction under this program.

The FAU Bridge Replacement program financed five bridge replacement projects in urban areas, at a cost of about \$3.8 million. Bridge replacement funds finance 80 percent of the cost with local agencies responsible for the remaining 20 percent.



he Equipment and Procurement Division procures and maintains an equipment fleet that efficiently and

effectively lets the Missouri Highway Transportation Department (MHTD) carry out its functions. As of June 30, 1990, the division was maintaining 6,056 rental units such as passenger cars, trucks, carryalls, tractors, mowers, motorgraders and others.

Fuel used in the fleet during fiscal year 1990 was down about 3.2 percent compared to fiscal year 1989. The average price of gasoline increased 7.5 percent, and diesel fuel increased 27.0 percent. The total spent on fuel increased 9.2 percent.

The department needed 4,823,800 gallons of gasoline and 3,155,581 gallons of diesel fuel to operate the fleet this fiscal year. MHTD also used 10,242 gallons of anti-freeze, 89,115 gallons of lubricating oil, 43,204 gallons of hydraulic oil and 60,236 pounds of multi-purpose gear oil and lithium

The Off-System Bridge Rehabilitation and Replacement Program provides federal funds for bridge repair and replacement on county roads not on a federal-aid system. About \$10.4 million was obligated for projects qualifying for this program with counties providing 20 percent matching funds. During the fiscal year, 93 projects were approved for preliminary engineering charges; 64 were approved for construction, and 66 projects were placed under contract by the counties.

During the fiscal year, 11 bid openings were held. Projects totaling \$349 million were placed under contract. An average of 4.3 bids were received per project.

Prices increased during the past year with the Missouri average composition cost index being 115.4 compared to base year 1987. The 1989 cost index reflects a 13.9 percent increase when compared with the 1988 cost index of 101.5.

grease. The department contracted for tires and tubes costing \$918,515.30; tire chains costing \$21,846.16; and shop equipment, parts and supplies totaling \$11,964,562.47 during fiscal year 1990.

This division also provides the tools, supplies and materials required in the department's operations. In an effort to give better service to the user division, MHTD is using annual contracts for many items instead of periodic purchases.

During fiscal year 1990, the department continued purchasing batteries, pneumatic tires and tubes for direct shipment from the supplier to each district office. This saved in freight costs.

To save money various supplies and equipment are produced at the headquarters garage when labor is available. The Equipment and Procurement Division continued to haul freight and internal mail with department vehicles and saved an estimated \$127,324 during the fiscal year.

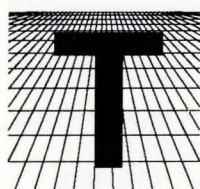
the equipment and procurement division



Materials purchased for highway maintenance during fiscal year 1990

Various Types of Asphalt	34,569,160 gallons
Gravel/Stone/Chat	1,478,480 tons
Paint	649,000 gallons
Reflectorizing Spheres	4,580,000 pounds
Sodium Chloride	131,977 tons
Calcium Chloride	3,097 tons
Agricultural Seed	59,140 pounds
Treated Wood Sign Posts	15,707 each
Steel Sign Posts	14,727 each
Grader Blades	367,000 pounds

**equipment
and
procurement
continued**



The Fiscal Services Division is responsible for the accounting and expenditure control for the Highway and

Transportation Department. This division processes and records all the department's records of financial transactions.

Based on anticipated revenues and disbursements, the division prepares legislative budget requests and annual internal budgets.

The division reviews payment documents for accuracy and priority of payment. It also reviews the documents to determine if funds are available before recording and certifying for payment.

The division processed 219,325 checks during fiscal year 1990. Disbursements for highway and transportation functions equaled \$717,561,140.51.

Other state departments disbursements from highway funds equaled \$120,555,803.98. Total disbursements from all funds equaled \$838,116,944.49.

The department is self-insured for workers' compensation and automobile liability. A contracted administrator processes the workers' compensation claims. During this past fiscal year, there were 1,040 workers' compensation cases. In-house claims staff processed 744 automobile liability cases. Although not technically self-insured, all general liability claims are processed within the Risk Management Section of the Fiscal

Services Division. A total of 511 general liability claims were processed during the past fiscal year.

This division also administers the regulations and policies of the Highway and Transportation Department and State Highway Patrol Medical and Life Insurance Plan, which includes the State Furnished Life Insurance Plan and the Optional Life Insurance Plan. As of June 30, 1990, there were 10,196 health insurance plans, 7,893 state-furnished life insurance plans and 7,973 optional life insurance plans in force.

From July 1, 1989, through June 30, 1990, there were 76,055 health claim payments with \$17,593,352.06 paid in benefits.

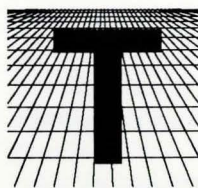
During the same period, there were 19 life claims under the state-furnished plan and 33 life claims under the optional life plan with \$285,000 and \$1,038,500 in death benefits to survivors. During the fiscal year, the property damage recovery unit collected \$935,095.51 involving 1,497 claims.

The department's safety program is also part of the Fiscal Services Division. The department's safety coordinator supervises the safety program. Safety officers are located in the Kansas City, St. Louis and Springfield districts.

The Fiscal Services Division is also responsible for the Highway Employee and Highway Patrol Retirement System accounting and payroll records. From July 1, 1989, through June 30, 1990, the division processed 38,269 retirement system benefit payments totaling \$29,204,829.

**the
fiscal
services
division**

the information systems division



he Information Systems Division provides mainframe computing facilities, application programming, data base facilities, data entry and support for personal computer and office automation for the Missouri Highway and Transportation Department (MHTD). The division also oversees MHTD's telephone communications systems including voice and data.

The department's foremost automation effort has been the installation of hardware and software for Computer Aided Drafting and Design (CADD). This year, the process has continued into the second phase with installations in MHTD's districts 3, 4, 5 and 6. Because of the first phase's success, MHTD installed the Bridge Division units this year although they had been scheduled for a later date. This second phase also included a planned expansion of the CADD mainframe to accommodate the additional workstations.

The department upgraded its mainframe computer and acquired a Data Base Management System. This mainframe and data base provides a central common data storage and retrieval system that will be the heart of future applications. Other system changes include upgrading the operating system and the program used to store and maintain all computer programs.

MHTD's office automation efforts include a statewide mail and calendar system on the mainframe, a local area net (LAN) that connects headquarters personal computers and a link that lets LAN workstations have mainframe access. Local area networks were created in five districts, and all can communicate with department mainframes. Communication with other state agencies is available.

A lot of the programming support in the application area is maintaining existing programs. Laws, regulations and other conditions create the need for maintenance. The salary payroll, bridge rating, contractor bid analysis and

project status systems had substantial maintenance.

The second largest area of the division's programming effort is in making data available to users through their workstations. New applications and conversion to the mainframe relational data base are other priorities. The availability of personnel, project and design data to users has been expanded.

A user-developed system was implemented to provide better handling of the data resulting from a contractor's progress on a construction project. This new system reduces work for the engineering office that monitors the construction project. The system also provides data used when paying the contractor.

MHTD acquired an application for a purchasing system and a system to distribute the merchandise. Planning and installing of the initial system loading have started.

An MHTD training center is used for CADD and office automation classes. The CADD training includes roadway design software (CEAL) and software used for creating other plans (CADAM). Office automation training includes word processing, spread sheets and MHTD's electronic mail system.

MHTD has 900 personal computer workstations and 150 terminals. Although some of these units are not connected to the department's communication network, there are still almost 1,000 users with access to the headquarters central computers. Almost 12,000 jobs per month are processed through the mainframe.



his division has three areas of responsibility in the Missouri Highway and Transportation Department's (MHTD) cost accounting systems. The first area encompasses operational reviews at the division and district level in such activities as construction, right of way, preliminary engineering, administration, financial management, information systems, planning and transportation. These reviews determine if division and district operations comply with published

department procedures and state and federal regulations. This insures the integrity of developed and incurred costs.

The division's second area of responsibility involves auditing final invoices for utility and railroad relocations, federal-aid urban (FAU) projects, bridge replacement off-systems (BRO) projects, transportation grants and miscellaneous billings to the department. The third area includes developing, revising and maintaining the department's accounting systems and written operating and coding procedures.

the internal, review, audit and systems division



Audit totals from July 1, 1989, to June 30, 1990, were as follows:

50	Utilities	\$ 2,844,766
36	Railroads	2,051,618
16	FAU	14,357,257
79	BRO	11,847,771
24	Miscellaneous	5,129,712
<u>142</u>	<u>Pre-audit Contract Reviews</u>	<u>11,490,650</u>
347		\$47,721,774



he quality of materials for construction and maintenance of the state highway system is the primary responsibility of the Materials and Research Division.

District Materials and Research employees coordinate field inspections for the sampling, testing and approval of materials. Employees at the central laboratory in Jefferson City test and evaluate materials used in Missouri's highways and bridges. This division's tasks include material specifications preparation; geotechnical investigations; pavement type selection; soil, bridge and pavement condition surveys; aggregate quality control; Portland cement and asphaltic concrete mixtures design and control; special investigations and research.

The central laboratory is an approved facility inspected regularly by national

inspection agencies such as the Cement and Concrete Reference Laboratory (CCRL) and the American Association of State Highway and Transportation Officials Materials Reference Laboratory (AMRL). AMRL inspected the laboratory in September 1989, and CCRL inspected the lab in February 1990. Both found no deficiencies.

Many materials routinely tested in the field also are tested in the laboratory to insure statewide uniform testing procedures. The laboratory also tests materials requiring special equipment and procedures. Efforts to automate some laboratory tests through digital data acquisition have continued.

The division continues to develop and monitor new asphaltic concrete mixtures designed to help prevent premature rutting. Division personnel are conducting a study to evaluate new nuclear density gauges for mix compaction.

New product evaluation is an

the materials and research division

important division function. The need to make quick pavement and bridge repairs has generated "fast-setting" concrete patching materials and overlay systems that division personnel are evaluating. MHTD has a project with an asphaltic overlay containing reclaimed ground rubber tires; division personnel are evaluating the overlay.

This division also obtains and interprets the subsurface information needed to design highways and bridges. Drilling equipment and crews from the division's headquarters in Jefferson City obtain the data. Crews and equipment are dispatched throughout the state.

Personnel also investigate various geotechnical matters including foundation stability and settlement of embankments; slide corrections; subgrade and base stabilization; environmental studies; bridge and wall foundations; sinks and mine subsidence; and the use of fly ash. Special investigative techniques include electrical resistivity and seismic; down-

hole photography and sonar; and field permeability testing.

The department continues to support the Strategic Highway Research Program (SHRP). SHRP has approved 19 test pavement sections in Missouri. MHTD also has submitted for SHRP's approval many special construction and maintenance effectiveness test sections.

A department representative serves on the SHRP Advisory Committee for Concrete and Structures. The department has established an MHTD/SHRP Coordinating Committee to inform employees about SHRP's work.

The Materials and Research Division has a representative on the technical research committee, which reviews research work and invites problem statements on research from MHTD employees statewide.

From July 1, 1989, through June 30, 1990, a total of 17,298 samples were tested, including those of an experimental or investigative nature.



Common materials inspected, tested and approved in fiscal year 1990

Aggregates	11,773,612 tons
Cement	548,087 tons
Reinforcing Steel	16,972 tons
Culvert Pipe	
Corrugated Metal	79,697 linear feet
Reinforced Concrete	130,966 linear feet
Vitrified Clay	122 linear feet
Joints - Bituminous, Fiber	208,406 linear feet
Joints - Rubber	49,498 square feet
Joints - Metal	186,755 linear feet
Guard Rail	217,306 linear feet
Posts, Metal	50,179 posts
Precast Units	
Median Barriers	3,042 units
Concrete Bridge Beams	1,369 units
Concrete Inlets	1,146 units
Concrete Manholes	143 units
Piling and Round Posts	4,295 linear feet
Bituminous Material	
Cutback	14,332,717 gallons
Penetration	10,071,676 gallons
Emulsified	23,521,096 gallons
Asphalt Cement	30,215,029 gallons
Paint	751,703 gallons

**materials
and
research
continued**



The Maintenance and Traffic Division is responsible for the maintenance and traffic operations of the 32,285-mile state highway system. The division also maintains 20 rest areas along the interstate system, 70 roadside parks on the primary and supplementary highways and 385,000 acres of highway right of way.

Since 1974, the department has built commuter parking lots along many high-traffic highways to conserve energy. As of September 1990, there were 94 parking areas with a total of 5,466 parking spaces.

In 1986, the department began installing liquid calcium chloride or liquid magnesium chloride dispensing units at maintenance facilities along high-volume interstate and primary routes. Liquids are applied to salt and other abrasives to make these materials more efficient in removing snow and ice from the roadway. In 1989, the department added 36 locations and in 1990 added 31 locations under the program.

In 1988, the department, cooperating with the Department of Corrections and Human Resources, employed incarcerated personnel in maintenance activities. These crews perform labor-intensive duties such as landscape planting and maintenance, and erosion control.

By using incarcerated people, the department benefits by having an economical labor pool complete duties that would be neglected. The incarcerated personnel benefit by participating in a typical work environment. The inmates are from minimum security institutions, have no history of escape and are within two years of release. We now have crews working in districts 1, 4, 5, 8 and 10 and the Highway Gardens in Sedalia.

Along with the University of Missouri-Columbia, the division sponsored a one-day training program on pesticides for 355 employees. The program trains employees to properly use pesticides and should improve the

safety and effectiveness of pesticide use on department right of way.

During this fiscal year, Missourians showed much interest in the department's Adopt-A-Highway program. This program, introduced in 1987, increases public awareness of environmental problems along Missouri highways by letting the public adopt highway sections to mow, beautify or clean-up. By April 1989, there were 1000 adoptions. As of June 30, 1990, there were 4,231 adoptions covering about 7,000 miles of state highways. Most adoptions are for litter control, but more than 100 adoptions are for beautification plantings.

The public's desire to improve the appearance of highway right of way helped develop the department's Growing Together Program. Growing Together is a cooperative effort between the department, state and local governments and private groups to enhance the looks of state highways. MHTD and the departments of Conservation and Corrections help local agencies and groups in beautification projects such as landscaping interchanges and intersections.

In the Growing Together program, the groups can plant shrubs, trees, flowers and other greenery. Local city or county governments propose areas to be developed. After MHTD approves the area, the local government or civic group funds the project. The department helps with design and bidding. When possible, incarcerated people plant trees, shrubs and flowers. The Conservation Department gives seedlings to plant along the beautification area borders. There are active projects in Jefferson City, Columbia, Warrensburg, Cameron, St. Louis City, Springfield, Kansas City, St. Louis County and Cape Girardeau.

MHTD issues overweight and overdimension permits through this division. The permits insure that vehicles exceeding the legal dimension and weight limits do not cause structural damage to bridges and pavements. There were 91,382 overdimension, overweight and overdimension/overweight special

the maintenance and traffic division

permits issued during the fiscal year. District offices issued 14,019 or 16 percent of the permits. Included in the total were 1,429 permits issued to governmental agencies or subdivisions at no charge.

Division personnel do routine inspections of all span-type bridges on the state highway system. Besides routine inspection, the hanger pin assembly unit on bridges is ultrasonically tested to detect pin failures every other year.

The division uses two underbridge inspection units called "Snoopers." Both Snoopers perform fracture critical bridge member inspections and in-depth inspections where access is difficult.

A school to train off-system bridge inspectors was held in October 1990; 85 inspectors attended. Division repair crews completed structural repairs on 215 bridges, and division paint crews painted 187 bridges during fiscal year 1990.

Activities funded from 402 Program funds under 3+ Standards of the Missouri Highway and Safety Program and coordinated by the Missouri Highway and Transportation Department are as follows.

Bridge Engineering Assistance Program — This program helps political subdivisions obtain information on the structural adequacy of bridges under their jurisdiction. Two consultants retained by the Missouri Highway and Transportation Commission perform these services. The consultants determine structural adequacy, establish posted weight limits and develop priorities for bridge repair or replacement. Structural adequacy reports and inventories were conducted on 62 bridges from October 1989 to September 1990 at an average cost of \$1,425 per bridge.

Traffic Engineering Assistance Program — This aids political subdivisions who have traffic engineering problems that need review but don't have personnel to do these reviews. Two consultants retained by the commission perform the service; they completed 33 studies in political subdivisions from October 1989 to

September 1990. The average cost was \$2,829 per study.

A total of 67 traffic signals were installed at intersections statewide. Ten of the 67 intersections were signalized by permit and 22 intersections were signalized by maintenance forces or maintenance contracts.

The division continued interconnecting various traffic signals for traffic progression. New equipment to control and monitor traffic signals from district offices was put in service.

Contracts were also let to replace many older, two-way mobile radios and to expand the use of mobile radios in various divisions and district positions. The program to replace all fixed relay station equipment continues.

MHTD opened the new Headquarters Sign Shop May 1, 1988. Since its opening, more than 359,000 new signs have been made. MHTD's Reclamation Plant salvaged about 123,000 signs.

Sheltered workshop employees are used to reclaim button copy letters. This process saves time and money in sign production and provides the workshop with desirable duties.

In calendar year 1989 the department placed 88,500 miles of centerline, laneline and edgeline stripes, using approximately 750,000 gallons of paint. To complete the work, the department used 17 over-the-road stripers. The operation includes a nurse truck, attenuator trucks and a lead truck.

During the striping season, bulk paint storage facilities were started in Hannibal, Joplin and Willow Springs. These assemblies consist of two bulk paint tanks that can hold 10,000 gallons each of white and yellow paint. In 1991, the department will set up three more bulk paint operations in Macon, Kansas City and St. Louis.

In calendar year 1989 the department placed about 19,000 miles of no passing zones. In 1989 MHTD purchased four digital no passing zone determination machines to aid in logging of no passing zone striping on all routes currently maintaining the centerline stripe.

The division continued its 120/ Medium Improvement Program in 1989,

investigated 13 locations where more accidents than normal had been occurring and implemented corrective measures at the spots.

Maintenance and Traffic investigated 100 locations that had 20 or more accidents throughout a three-year period and evaluated countermeasures for possible funding under Section 209 of the 1973 Federal Highway Act. This division provided the Planning Division with 38 locations to be put on the Right of Way and Construction Program at an estimated cost of more than \$5 million.

The 40th Annual Traffic Conference was held April 23-25, 1990, in Columbia. County, city and state and federal government people attended this two-day conference on solving traffic problems. Before the conference, Federal Highway Administration (FHWA) personnel presented a Design and Operation of Work Zone Traffic Control workshop.

The program of monitoring peak period freeway traffic in the Kansas City and St. Louis areas was continued during 1990. The location and severity of congestion on about 170 miles of freeways was documented.

Low capital improvement projects have been or are being implemented. These include the following:

1. A test closing of the ramps at Interstate 70 and Riverview in the St. Louis area.
2. Lane delineation changes on northbound Interstate 270 approaching I-70 in the St. Louis area.
3. Approval of lane delineation changes on northbound Route 71 at Blue Ridge Boulevard in the Kansas City area.

A freeway incident management plan is under development for both Kansas City and St. Louis areas with initial stages implementation planned for calendar year 1991.

A low capital improvement program was implemented on westbound Interstate 70 in the St. Louis area between Jennings Station Road and Lucas and Hunt, which relieved a longtime traffic congestion problem. Other projects implemented to relieve congestion were an alternating one-way

operation on the Route 115 bridge over the Missouri River at St. Charles and the re-striping of I-70 westbound on the Missouri River Bridge at St. Charles for a five-lane operation.

To improve freeway monitoring, the department purchased hand-held computers to monitor traffic flow and print traffic speeds for districts 4 and 6. These computers also monitor the progression of signalized roadway systems.

Property owners removed 451 billboards and state forces removed eight billboards because of outdoor advertising laws and regulations during calendar 1989. MHTD issued 720 new permits for billboards and renewed 3,306 permits under these regulations. Also, the department issued 216 licenses for junkyards and 12,111 driveway and excavation permits during the calendar year.

***maintenance
and traffic
continued***



he Personnel Division provides assistance to the Missouri Highway and Transportation Department (MHTD)

in matters such as employment; college recruiting; employee training and development; wage and salary matters; personnel policy; affirmative action administration; employee relations and personnel records and statistics maintenance. Personnel professionals are located in the Main Office and districts 4, 6 and 8.

The division develops and implements programs to ensure that competent job applicants seek employment with the department; employees are properly trained and fair and productive working conditions exist.

The department is an equal opportunity employer and considers affirmative action a priority. The Personnel Division and MHTD's districts strive to attract qualified minority and female applicants. The division monitors Equal Employment Opportunity (EEO) progress and keeps the headquarters office and districts informed. The division also monitors requirements of Title VI of the Civil Rights Act of 1964 to ensure that disadvantaged and women-owned business enterprises may participate in state and federally assisted programs.

New employee orientation and training is conducted through the department's supervisors, the Personnel Division and outside specialists. The orientation program began at the Main Office and is being implemented throughout the districts.

Employees may attend training conferences and seminars related to their work. MHTD's operational divisions provide technical skills training. The Personnel Division supplements employee training by conducting supervisory training programs.

Professional secretary training was held in Jefferson City for all secretarial employees throughout the state. The program covered many skills needed in the development of secretarial

employees.

In January 1989 the department implemented a three-year Graduate Engineer Development Program for new civil engineers, which continues to be administered statewide. The program exposes the new engineer to the department's disciplines, policies, procedures and personnel in preparation for advancement. Each graduate engineer has a training plan for the first three years of employment.

MHTD has expanded its summer hire program to include summer internships for civil engineers. The internship program not only helps the department meet its peak season needs in the technician or para-professional areas but also lets students gain experience and learn more about department careers. MHTD employed 67 interns statewide in construction and highway design. This number should increase in the future, and the program will expand to other divisions.

The department tries to maintain a positive work environment for high employee morale and motivation. All personnel transactions are reviewed to guarantee equal and uniform salary administration and policy application.

The department implemented a new job evaluation system July 1, 1989. The Personnel Division keep the department's job specifications current by conducting 100 job audits per year.

The division processed 310 claims for unemployment compensation during the fiscal year and obtained 49 denials out of 67 unwarranted compensation claims. The division did not protest 225 processed claims because the claimants were temporary employees who became unemployed through no fault of their own and were entitled to unemployment compensation.

The division maintains centralized personnel records. The personnel data is used for employee profile, employee trends and manpower planning analysis. Computer applications have improved personnel record-keeping.

The department had 6,030 salaried employees and 866 part-time and seasonal employees on June 30, 1990. The department hires temporary and

the personnel division

emergency employees for such duties as snow removal.

The Personnel Division held pre-retirement seminars for headquarters and District 5 employees and their spouses.

From July 1, 1989, to June 30, 1990, the division processed 168 employees for retirement. Forty-one were 55 to 59 years old with 30 or more years of service. Five were between the ages of 55 and 59 with 15 or more years of service, and three were between the age of 55 and 64 with 10 or more years of service. Also 83 employees between the ages of 60 and 64 with 15 or more years of service were processed, and 12

employees were 65 or older with four or more years of service.

Nine employees qualified for long-term disability. Fifteen vested members also elected to begin annuity benefits. The Highway Employees' and Highway Patrol Retirement System currently is paying benefits to 2,746 department retirees and survivors; 47 of these are long-term disabilities.

The average salaried MHTD employee has given almost 15 years of service to the department.

**personnel
continued**



The Planning Division's efforts in fiscal year 1990 focused on planning for the state's future highway system. To

do this, the division collected and maintained financial and roadway information, determined existing and future highway needs and developed planned improvements and financial programs to meet those needs.

The Planning and Programming Section updated the Missouri Highway and Transportation Department's (MHTD) highway needs study and developed long-range plans.

The comprehensive planning process continued in the state's six urban areas. This process requires cooperation between the department and local jurisdictions and planning organizations. Through the process, the department can develop multimodal, long-range plans and compile improvement programs in the urban areas of Kansas City, St. Louis, Springfield, St Joseph, Columbia and Joplin.

The division prepared the 1990 bridge service ratings. It also prepared and published the 1991 Highway Right of Way and Construction Program that shows improvements scheduled for the next 12 years. The division also

prepares monthly updates on the progress of Proposition A.

The Traffic Section made approximately 4,000 portable vehicle counts and collected continuous count data at 102 permanent sites on the state's 32,000 miles of highways in fiscal year 1990. Speed surveys to determine compliance with the 55 mph speed limit were conducted at 34 statistically selected locations throughout the state. Vehicle miles of travel increased 5.9 percent from 1988, making 1989 the eighth year in a row of record-increasing travel in Missouri.

Automatic vehicle classification data was collected at 100 sites, and trucks were weighed with weigh-in-motion equipment at 30 sites for department information. Automatic vehicle classification and weigh-in-motion data was collected at 18 sites for the Strategic Highway Research Program (SHRP). Automated pavement condition survey information was used to develop the department's resurfacing program.

The division prepared an annual vehicle report for 1989. The report includes information on travel for Missouri's roads and streets. Through roadside interviews with motorists, MHTD gathered selected travel characteristics at five locations within the state. The information from these studies was used to determine needs

**the
planning
division**

and plan improvements for the locations.

The mapping and drafting area of the Systems Support Section develops and publishes the official state map and county and city maps. It also prepares artwork and graphic displays for MHTD and other state departments. The division will produce 2.5 million copies of the 1991-92 official map.

Systems Inventory collects and maintains current and historical project data including roadway information and construction costs. Data regarding system mileage and log miles are also maintained.

Cities of more than 5,000 population received assistance in updating their functional classification and federal-aid systems. Information was compiled to update the National Highway Performance Monitoring System in urban areas. The division developed a preliminary network for the Highways of National Significance and submitted this to the Federal Highway Administration.

Research on wearing surface of the Poplar Street Bridge across the Mississippi River in St. Louis continued. Additional time and funding were allocated to the study because results of the initial investigation were inconclusive.

A study to determine the feasibility of low-growing grasses and growth regulators to reduce right of way mowing was initiated.

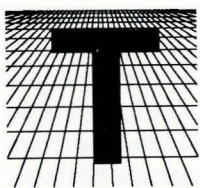
To remedy the frequency and severity of accidents at high-risk locations, an update of the manual on identification, analysis and correction of high-accident locations was initiated through the University of Missouri-Rolla.

The Technology Transfer Assistance Program continued to link the sources of technology and the agencies that can make use of it. Through workshop instruction, guidesheets, videos and quarterly newsletters, the program has encouraged field use of technology. The cities and counties have become more aware of the available program, and a positive relationship continues to develop.

Additional workshops concerning Herbicide Training, High-Accident Location Identification and Correction, and Bridge Maintenance are being considered.

The Finance Section maintains historical data and projections of income and expenditures for the department. Financial information is provided for cash management, legislative fiscal notes and various fiscal scenarios. Financial vehicle registration and fuel usage data were provided to the Federal Highway Administration for inclusion in a national summary of highway statistics.

**planning
continued**



The Public Affairs Division keeps Missouri Highway and Transportation Department (MHTD) employees and the public informed about department activities.

Public interest in highway and transportation matters continued at a high level during the year, and the Public Affairs Division responded by increasing the dissemination of information. To do this, the division used news releases, magazines, brochures, leaflets, fact sheets, slide films, exhibits and displays, radio and television programs and public speaking engagements.

Public Affairs personnel keep in contact with the state's news media and routinely distribute information to the media.

During fiscal year 1990, the division prepared and distributed about 114 news releases. In addition, numerous special articles, feature stories and photographs were supplied to magazines, newspapers and other publications. July 1, 1989, the division contracted with an external statewide

newspaper clipping service to keep officials informed of department coverage and comment.

The division often helped in the groundbreaking and formal opening ceremonies of major road and bridge projects. Division personnel developed a variety of speeches and brochures, as well as the department's annual report.

The division monthly published and distributed the "Missouri Highway and Transportation NEWS." The MHTD NEWS is the department's employee newspaper with a circulation of more than 9,500.

Per month, the division answered approximately 1,000 mail and telephone requests about maps, road information, routings, educational material and films.

The division supervised the distribution of more than one million highway maps, many of which were given out at the Missouri State Fair. Public Affairs personnel staffed the annual fair exhibit in the Highway and Transportation Gardens, a roadside park on the fairgrounds.

The department's technical and video library also continued to be housed in the division.

the public affairs division



This division acquires realty rights for the construction and improvement of state highways and related facilities. It provides a relocation assistance and payments program for people displaced by land acquisition. It also disposes right of way no longer needed for state highway purposes and assists the Chief Counsel's Office in preparing condemnation cases.

During fiscal year 1990, the cost of right of way acquired for highway construction totaled \$24,050,554.33.

The division acquired 1,183 parcels of land. This number includes 921 parcels acquired by negotiated settlement and 262 by condemnation, or 78 percent acquired by negotiation and 22 percent by condemnation.

Total payments of \$1,179,827.58 were made in fiscal year 1990 under the Relocation Assistance and Payment Program to help displaced families, business and farm operations relocate. During the fiscal year, 308 relocation claims were processed and paid.

During fiscal year 1990, the division obtained 1,091 appraisals. Each month an average of 91 appraisals were produced. The division's total appraisals also includes 483 damage statements prepared on parcels with an estimated value of \$2,500 or less.

The sale of improvements located on right of way acquired for highway construction and excess property totaled \$468,804.17 during fiscal year 1990. And rental of airspace, excess property and property acquired for future construction equaled \$404,036.77.

the right of way division



Aviation

As an industry, aviation is a major contributor to the state's economy. As a transportation mode, it moves millions of Missourians each year. The Transportation Division's Aviation Section promotes these values through the development of industry, the improvement of airports and the education of local governments and individuals.

Aviation Section personnel give information or technical advice to airport sponsors and others who are interested in the establishment, improvement or promotion of aeronautical facilities.

Aviation provides financial assistance to cities, towns, counties or airport authorities in the state through two grant programs. The capital improvement grant program gives financial assistance for planning and construction or expansion to sponsors of publicly owned airports. Funds under this program are granted on a 50 percent state/50 percent local matching basis.

Under the airport maintenance program, funds may be granted to airport sponsors on a 75 percent state/25 percent local basis for maintenance on runways, taxiways and parking aprons and for emergency repairs or safety-related items. This program's financing is derived from the fuel tax on aviation gasoline.

A portion of the fuel tax revenue is used for the annual publishing and distribution of the Missouri Aeronautical Chart and Airport Directory. The Aviation Section published 15,000 copies of the chart/directory at a cost of \$9,406.

As a result of the Airline Deregulation Act of 1978, the Aviation Section monitors the small community essential air service program that is regulated by the Department of Transportation. A requirement of the act is that all actions affecting the air service to smaller communities must be coordinated with state aviation agencies.

During fiscal year 1990, the section performed 174 airport inspections and 192 obstruction evaluations; three

objections were filed.

Missouri has 442 airport facilities. These include 367 airports, 71 heliports and four seaplane bases. Of these, 146 facilities are open to the public, and 296 are for restricted use. There are 6,004 registered aircraft and 12,838 active pilots in the state. Seven airports provide scheduled air transportation and enplaned about 15 million passengers in the fiscal year.

The Aviation Section received and processed 33 applications for financial assistance under the airport capital improvement and maintenance programs. The section provided 19 capital improvement grants for a total of \$356,569, and six maintenance grants for a total of \$114,623. The \$356,569 in capital improvement grants generated approximately \$3 million in combined local and federal money. Aviation's capital improvement grant program is an 18-month program. Consequently, data for this report is a combination of fiscal year 1989 and fiscal year 1990 projects.

Third State Economic Development projects were in progress at 10 Missouri airports during fiscal year 1990. A total of \$479,512 was expended for these projects.

In May 1989, the Federal Aviation Administration (FAA) selected Missouri, Illinois and North Carolina to conduct block grant demonstration programs. Under this program, MHTD's Aviation Section administers all federal airport improvement funds for airports that enplane less than 10,000 passengers per year. For federal fiscal year 1990, the Aviation Section received \$10.2 million federal money and has programmed 25 projects. The demonstration program extends through Sept. 30, 1992. The program's purpose is to see if states can administer the federal aid program for smaller airports more efficiently than the FAA.

The Missouri State Airport System Plan Update was submitted to the FAA for review and approval. The plan has been computerized.

The Aviation Section began obtaining aircraft activity counts at selected airports during fiscal year 1990.

the
trans-
portation
division

The activity counts provide more accurate data for the Missouri State Airport System Plan. The counts are obtained by placing acoustic monitors near runways at four periods of the year. The four counts are then calculated for an annual operations number for each airport. During fiscal year 1990, counts were obtained at 20 airports.

The Aviation Section is involved with the American Association of State Highway and Transportation Officials (AASHTO) Standing Committee on Aviation; National Association of State Aviation Officials (NASAO) Finance Committee; NASAO Strategic Planning Group; St. Louis-Lambert International Airport Master Plan Technical Advisory Committee; City of St. Louis Heliport Study; and the St. Louis Airspace Users Advisory Committee. The section also monitors the Scott Air Force Base Joint Use Study.

Railroads

The Railroad Section provides, maintains and improves rail transportation within Missouri. The section administers rail planning programs, rail project implementation, the Amtrak 403(b) program and the railroad/highway grade crossing program.

In fiscal year 1990, the rail planning activities program carried out various items including the following:

- *railroad data collection and tabulation to be included in the next scheduled Rail Plan Update, the analysis of specific light density lines as possible candidates for rail projects;

- *branch line abandonments;

- *the monitoring and implementation of federal rail legislation;

- *Rio Grande Industries acquisition of the Chicago, Missouri and Western Railway Co.'s rail line between East St. Louis to Chicago, Ill.;

- *Rio Grande Industries' proposed acquisition of the Soo's Kansas City to Chicago rail line;

- *Chicago and Northwestern's acquisition by Blackstone;

- *Union Pacific/Chicago and

Northwestern trackage rights proposal;

- *Gateway Western Railway Co.'s acquisition of the Chicago, Missouri and Western Railway Co.'s Kansas City to St. Louis line segment;

- *continuation/expansion of the Local Rail Service Assistance program; and

- *other general railroad matters.

The rail project implementation program involved two rail projects. They are as follows.

- *5.5 miles, Green Hills Rural Development Inc.'s Locust Creek to Swan Lake Refuge — A rehabilitation project involving cross-tie insertion, additional ballast, surfacing and lining. The project work started in May and is in progress.

- *1.6 miles, Scott City Port Access Project — A rail facility construction project that includes the construction of a rail access spur into a river port site in Scott City. Detailed engineering design studies are under way with construction planned in spring 1991.

Missouri provides rail passenger service between St. Louis and Kansas City through the Amtrak 403(b) program. The Ann Rutledge and the St. Louis/Kansas City Mules trains are funded by a ratio of 65 percent state funding and 35 percent Amtrak funding. During fiscal year 1990, these two trains carried 172,126 passengers.

Efforts to build public awareness included a Midwest Regional Rail Map Brochure, published as a joint venture between Illinois, Indiana, Michigan, Missouri and Wisconsin. Radio promotion continued in the Kansas City, St. Louis and Columbia/Jefferson City markets.

Passenger station improvement activities included rehabilitating the exterior of the Warrensburg station; adding chairs at the St. Louis station; and washing the exterior stone walls and painting the interior and exterior at the Kirkwood station. Also, efforts continue with the city of St. Louis and Amtrak regarding a multi-modal transportation facility in St. Louis.

The Transportation Division is the communication link between the department and railroads for projects

**trans-
portation
continued**

involving railroad/highway crossings.

This division administers grade separation and at-grade crossings. Grade separation projects, such as highway bridges over railroads, involve personnel from the Planning, Right of Way, Legal, Bridge, Design and Construction divisions. These divisions' efforts must be coordinated with the railroad to secure timely approval of plans and execution of agreements and easements. The Transportation Division is pursuing 25 projects improving or constructing highways over or under railroads.

The Transportation Division also coordinates and administers a program to improve at-grade crossings. This fiscal year, the federal government (Section 130) apportioned \$4 million to Missouri for improving safety at railroad-highway crossings. About \$3.5 million will be used to install warning devices such as flashing light signals, gates and bells. About \$500,000 will be used to help pay railroads to install high-type crossing surfaces.

Transit

The Transit Section assists in the planning, developing and operating of the state's public transit and specialized paratransit systems. This function is carried out through the administration of state and federal programs relating to general public transportation and specific programs for the elderly and handicapped.

The Missouri Elderly and Handicapped Transportation Assistance Program provided state financial assistance for 154 nonprofit organizations offering transportation services to the elderly and handicapped at below-cost rates. For fiscal year 1990, program appropriations were \$1,471,755.

The 10 area agencies on aging received \$795,002 in state funds to supplement federal funds for elderly transportation. An additional \$131,853 were available to other organizations working with older Missourians. Altogether 60 elderly organizations received assistance.

State funds totaling \$544,900 were available to 94 sheltered workshops,

group homes and other handicapped facilities to assist in transportation.

Altogether the department helped subsidize 3,713,782 special transportation trips. The total cost of these trips was \$9,365,982.

Twenty-nine small urban and rural general public transit systems received financial and technical support from the department. Federal financial assistance is available under Section 18 of the Urban Mass Transportation Act and allocated to various systems by the department.

The small urban and rural systems had a combined operating budget of \$6,750,000; the department provided \$1,985,000. An additional \$450,000 in federal funds were used to purchase equipment.

The systems operated 295 vehicles, logged 6,500,000 miles and provided more than 2,100,000 trips.

Section 9 of the Urban Mass Transportation Act provides formula capital and operating assistance to transit systems in urban areas of more than 50,000 population. The department administers this program for Columbia, Springfield, St. Joseph and Joplin.

In fiscal year 1990, the department approved payment of \$1,950,000 in federal aid to the transit systems in Columbia, Springfield and St. Joseph. These systems operated 46 transit buses and provided 4,500,000 trips.

Capital assistance to nonprofit organizations giving transportation service to the elderly and handicapped is provided by the Urban Mass Transportation Act Section 16(b)(2). In fiscal year 1990, the program provided \$820,000 in federal assistance. This was matched with \$205,000 in local funds for the purchase of 48 vehicles, wheelchair lifts, ramps and similar equipment for 25 elderly and handicapped organizations.

At the end of fiscal year 1990, there were 450 assisted vehicles in service, operated by 141 local organizations that provide more than 2,800,000 trips.

The Transit Section gave staff support for the Coordinating Council on Special Transportation. The council is reviewing special transportation plans

statewide and will make recommendations based upon these plans. The council continues to investigate problems in the delivery of special transportation services in Missouri and recommend solutions to the governor and General Assembly.

Transit also administers the Rural Transportation Assistance Program, a training and technical assistance function funded by the Urban Mass Transportation Administration. Training courses offered include defensive driving, CPR and first aid, passenger assistance techniques and emergency procedures. Technical assistance is offered in the areas of vehicle procurement and maintenance. During the fiscal year 1990, there were 56 on-site driver training programs offered involving about 855 drivers.

The Transit Section applied for national discretionary financial assistance under Section 3 of the Urban Mass Transportation Act for the first time during fiscal year 1990. Federal assistance of \$2,550,000 was awarded. This grant included 18 subrecipients providing either general public or mass transportation to elderly and/or handicapped people. This grant will help purchase eight city transit buses, 26 mini buses, 41 vans, computer and radio equipment.

The Transit Section is preparing a second application for federal consideration in 1991.

Waterways

Waterways provides technical assistance to Missouri port authorities in promoting private capital investment, increasing commerce and establishing a free-trade zone within their port districts. Every city or county on a navigable waterway may form a port authority. Fifteen port authorities have been formed along the Missouri and Mississippi rivers. The Lewis County-Canton Port Authority was formed during the year. The department is frequently contacted by interested communities concerning the port authority program.

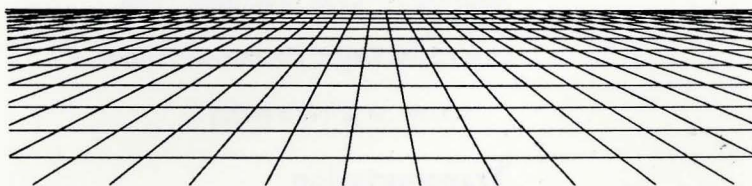
During fiscal year 1990, capital

improvement projects were completed in Southeast Missouri, New Madrid and Pemiscot County Port Authorities.

Their values totaled \$2.53 million. Work continues statewide on four port capital improvement projects that were funded during 1986, 1988 and 1989.

Besides technical assistance, funding was provided to help port authorities administer their port development programs. During the year, 13 port authorities used \$317,190 in grants. The recipients use these funds for managerial, engineering, legal, research, promotional, planning and other nonconstruction expenses.

trans- portation continued



Port Development Administration Grants

St. Joseph Regional	\$5,000
Kansas City	29,000
Jackson County	5,000
Howard/Cooper County Regional	31,000
St. Louis County	25,000
St. Louis City	18,000
Jefferson County	17,000
New Bourbon	5,000
Southeast Missouri Regional	52,095
Mississippi County	31,000
New Madrid County	42,000
Pemiscot County	52,095
Marion County	5,000
TOTAL	317,190



**statement of receipts and disbursements
for fiscal year 1990**

Highway	Receipt	Disbursements
Basic Revenue:		
Motor Vehicle License	173,902,675.52	
Dept. of Economic Development	1,959,597.52	
Motor Vehicle Use Tax	31,773,870.90	
Drivers License Fees	12,094,184.80	
Motor Vehicle Inspection Fees	2,309,840.98	
Motor Fuel Tax Receipts	291,019,103.69	
Vehicle Sales Tax Receipts	<u>61,803,812.53</u>	
Sub-Total	574,863,085.94	
Other Revenue:		
Misc. Escrow Fees	2,433,812.09	
Reciprocity Fund Interest	195,877.96	
Road Fund Interest	5,028,189.38	
Other Miscellaneous	<u>12,550,123.59</u>	
Sub-Total	20,208,003.02	
Federal Reimbursement:		
Federal Highway Administration	252,882,014.95	
Corps of Engineers	<u>1,316,354.78</u>	
Sub-Total	254,198,369.73	
Construction		407,762,929.98
Maintenance		198,225,965.96
Administration		59,998,835.84
Refund of Motor & Aviation Fuel Tax		25,816,674.20
Highway Revenue Generating Fund		1,288,048.00
O.A.S.I.		11,473,237.84
Other State Depts. (From Hwy. Fund)		<u>120,555,803.98</u>
TOTAL FOR HIGHWAY	825,121,495.80	849,269,458.69
Transportation		
Administration		1,241,122.54
Transit		7,100,141.41
Rail		1,987,046.83
Aviation		533,589.00
Water		1,066,873.81
General Revenue Fund	4,902,438.97	
Federal Fund	6,484,562.50	
Transportation Trust Fund	630,479.83	
Aviation Trust Fund	<u>78,044.85</u>	
TOTAL FOR TRANSPORTATION	12,095,526.15	11,928,773.59
Mississippi River Parkway Commission	7,500.00	
Third State Building Trust Fund	1,055,738.10	
Third State Building Fund	3,437.00	
GRAND TOTALS	862,431,659.94	838,116,944.49

**financial
summary**

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